

Course Catalog
1994-1996





Message from the President

The faculty and staff join me in welcoming you to Ivy Tech State College. The decision to continue your education is a commitment to embark on a journey of lifelong learning. I am pleased that you are beginning this journey at Ivy Tech.

Today's marketplace is highly competitive. Only those individuals with a solid educational background and finely-honed skills will succeed. At Ivy Tech, we prepare you to compete in that environment.

You have chosen a college known for teaching excellence. Our programs are challenging and keep pace with evolving technology. Our faculty and staff care about your success as a student.

Whether you plan to transfer to a four-year college or university, obtain employment training or update your skills, Ivy Tech will give you the knowledge and tools you need to meet the challenges of the future.

I wish you success as you embark on this journey.

Sincerely,

A handwritten signature in black ink that reads "Gerald I. Lamkin". The signature is fluid and cursive, with "Gerald" on the first line and "I. Lamkin" on the second line.

Gerald I. Lamkin
President

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College Profile

In just 30 years, Ivy Tech State College, more popularly known as Ivy Tech, has grown from a mere idea to a thriving post-secondary institution.

In 1963, the Indiana General Assembly established Ivy Tech as Indiana's first state-wide vocational technical college by appropriating \$50,000 for its development. Following the appointment of a state board of trustees, a president was named and the first training program was established in 1965. The General Assembly later authorized Ivy Tech's present regional structure of 13 administrative centers to provide accessible technical educational opportunities to all Indiana citizens. Between 1966 and 1969, the 13 regions were chartered and their boards of trustees appointed. Later, Ivy Tech was given authority to grant diplomas and certificates, including one-year technical certificates and two-year associate degrees, and to offer general education courses needed for its technical education programs.

The mission of Ivy Tech is stated in the authorizing legislation: "There shall be, and hereby is created and established, a new state post-high school educational institution to be devoted primarily to occupational training of a practical, technical and semi-technical nature for the citizens of Indiana."

Ivy Tech's growth in its relatively short history has been impressive. Enrollment reached more than 61,000 in 1992-93. The college had only 3,233 students in the fall of 1968.

Within the statewide Ivy Tech system, 3,907 full- and part-time faculty members teach in program areas offered in five instructional divisions: Business, Health and Human Services, Technology, Visual Technologies, and General Education and Support Services.

Ivy Tech's regional Business and Industry Training offices work closely with Indiana businesses to offer customized training, re-training and continuing education in response to specific company needs. These training programs are available at Ivy Tech or in-plant.

College Mission and Goals

The mission and goal statements adopted by the State Board of Trustees in October of 1991 are:

Mission Statement

Ivy Tech State College is a public, statewide, open-access, community-based, technical college. The college's mission is to enable individuals to develop to their fullest potential and to support the economic development of Indiana. Ivy Tech provides residents of Indiana with the general and technical education needed for successful careers or for continuation in higher education. The college provides courses, degree programs, counseling and related services, technical assistance, and community service to individuals, communities, and businesses and industries across the state. Ivy Tech promotes educational mobility through partnerships with local schools and other higher education institutions.

College Goals

1. To promote and expand access to programs and services that meet students' abilities, interests and potentials.
2. To ensure that every graduate of an Ivy Tech program possesses the technical skills to be successful in the workplace.
3. To provide a wide range of continually improving educational programs and services to individuals, businesses, industries and communities throughout the state.
4. To contribute to Indiana's economic development by providing the skilled workforce needed to attract and retain businesses and industries.
5. To serve the diverse populations that reside in the state.
6. To promote opportunities for individuals who have the ability, potential and desire to continue their education at a four-year institution.
7. To promote mastery of the general education skills needed to be successful in higher education and in the workplace.
8. To increase educational participation in Indiana.

Major Campuses

Ivy Tech serves Indiana through a network of 22 campuses. In addition, courses are offered in communities and workplaces across the state.

Anderson

104 West 53rd Street
Anderson, IN 46013-1502
Phone: (317) 643-7133

Hammond

5727 Sohl Avenue
Hammond, IN 46320-2356
Phone: (219) 937-9422

Bloomington

3116 Canterbury Court
Bloomington, IN 47401-0393
Phone: (812) 332-1559

Indianapolis

One West 26th Street
Indianapolis, IN 46208-4777
Phone: (317) 921-4800

Columbus

4475 Central Avenue
Columbus, IN 47203-1868
Phone: (812) 372-9925

Kokomo

1815 East Morgan Street
Kokomo, IN 46903-1373
Phone: (317) 459-0561

Elkhart

2521 Industrial Parkway
Elkhart, IN 46516-5430
Phone: (219) 293-4657

Lafayette

3208 Ross Road
Lafayette, IN 47905-5217
Phone: (317) 477-9100

Evansville

3501 First Avenue
Evansville, IN 47710-3398
Phone: (812) 426-2865

Lawrenceburg

575 Main Street
Lawrenceburg, IN 47025-1661
Phone: (812) 537-4010

Fort Wayne

3800 North Anthony Boulevard
Fort Wayne, IN 46805-1489
Phone: (219) 482-9171

Logansport

Eastgate Plaza
U.S. Highway 24 East
Logansport, IN 46947-2149
Phone: (219) 753-5101

Gary

1440 East 35th Avenue
Gary, IN 46409-1499
Phone: (219) 981-1111

Madison

590 Ivy Tech Drive
Madison, IN 47250-1881
Phone: (812) 265-2580

Major Campuses (continued)

Marion

2983 West 38th Street
Marion, IN 46953-9370
Phone: (317) 662-9843

Muncie

4301 South Cowan Road
Muncie, IN 47302-9448
Phone: (317) 289-2291

Richmond

2325 Chester Boulevard
Richmond, IN 47374-1298
Phone: (317) 966-2656

Sellersburg

8204 Highway 311
Sellersburg, IN 47172-1897
Phone: (812) 246-3301

South Bend

1534 West Sample Street
South Bend, IN 46619-3892
Phone: (219) 289-7001

Terre Haute

7999 U.S. Highway 41
Terre Haute, IN 47802-4898
Phone: (812) 299-1121

Valparaiso

2401 Valley Drive
Valparaiso, IN 46383-2520
Phone: (219) 464-8514

Warsaw

850 East Smith Street
Warsaw, IN 46580-4546
Phone: (219) 267-5428

Ivy Tech Foundation

Ivy Tech Foundation was established in 1969 as a not-for-profit corporation to raise funds to serve the needs of Ivy Tech State College (Ivy Tech) and its students.

The primary areas of the foundation's service are:

- Scholarships and grants-in-aid that allow students to enter the college and complete their studies.
- Loans for students who need temporary assistance until other sources of financial assistance can be obtained.
- Equipment purchases to increase the level of instructional quality in laboratories and classrooms.
- Faculty enhancement through training opportunities, rewards for excellence and inquiry, and funding for projects that bring experts from industry into the classroom.
- Seed money for innovative educational programs of exceptional merit.

Ivy Tech Foundation is a 501(c)(3) corporation. All gifts to the foundation qualify as charitable contributions for federal income tax purposes. In addition, these gifts qualify for a special Indiana state income tax credit.

College Calendar

The college calendar varies by region. Ivy Tech is on a semester schedule. Fall and spring semesters are 16 weeks long. The summer term is 11 weeks long. Specific start and end dates can be obtained by calling one of the campuses listed on pages ix and x.

Non-Discrimination and Equal Opportunity Policy

Ivy Tech State College provides open admission, degree credit programs, courses and community service offerings, and student support services for all persons regardless of race, color, creed, national origin, religion, sex, physical or mental disability, age or veteran status. Persons who believe they may have been discriminated against should contact the campus affirmative action officer or the Office of Student Services.

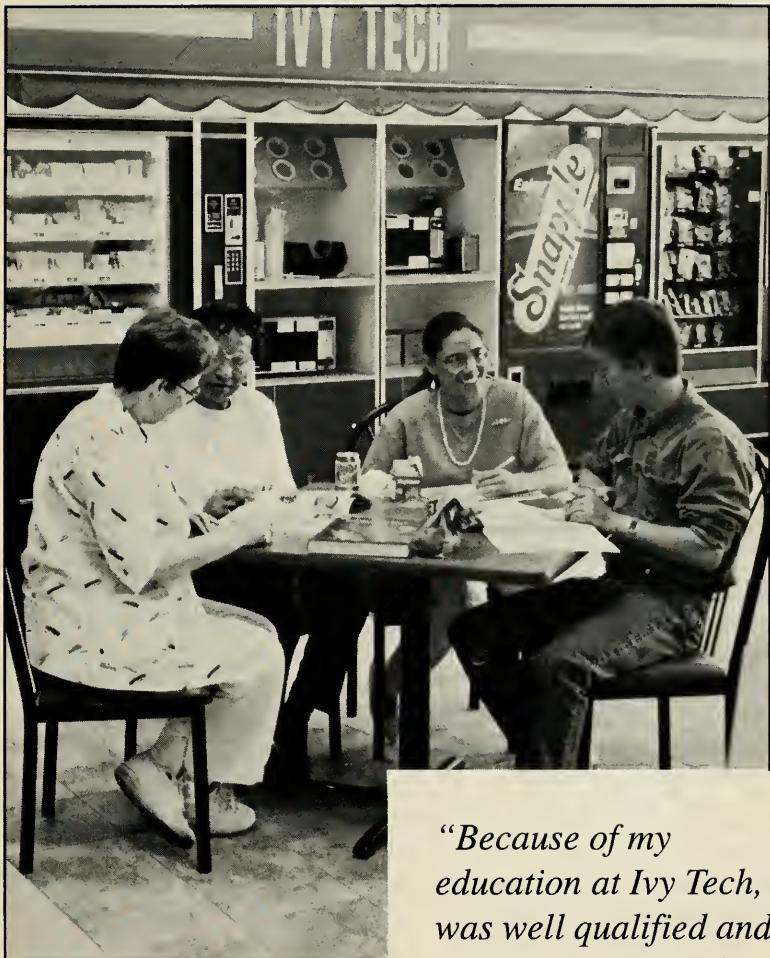
Catalog Disclaimer

This catalog is intended to supply accurate information to the reader. Occasionally, certain information may be changed.

The college may revise any matter described in this catalog at any time without publishing a revised version of the catalog. Courses, programs, curricula and/or program requirements may be changed or discontinued at any time. Information which appears to apply to a particular student should be verified by the Office of Student Services in each region. Regional information is found on pages ix and x. This publication and its provisions are not in any way a contract between the student and Ivy Tech State College.

College Central Offices

One West 26th Street
P.O. Box 1763
Indianapolis, IN 46206-1763
Phone (317) 921-4800



College Information and Services

“Because of my education at Ivy Tech, I was well qualified and prepared for the job market...I know my education provided many benefits. Just a few of those are self confidence, personal growth, respect, friendship and an overall healthy view of life as a whole.”

—Jeri Turner, Student

Entering the College

Admissions—Non-Degree Objective

Ivy Tech offers courses in many special career areas, including college preparation. Persons interested in taking any of the Ivy Tech courses are invited to do so. Admission as a non-degree student can be achieved simply by filing a completed registration form in the Office of Student Services. Non-degree students enrolling in general education courses must take the ASSET assessment. Other non-degree students may elect to take the assessment.

Admissions—Degree Objective

Ivy Tech is an open admissions college, accessible to all Indiana citizens past high school age. Some degree-granting programs have limited availability and require an entrance examination prior to acceptance to those programs.

For admission as a regular student to one of Ivy Tech's programs leading to an associate degree or technical certificate, the standard requirements are a high school diploma or General Education Development (GED) certificate and application for admission. The Office of Student Services will assist the student on request in obtaining an official copy of the diploma or GED certificate.

To ensure student success, all degree-seeking students must participate in the ASSET assessment. The purposes of assessment are to measure the student's achievement in basic skills areas of mathematics, reading, writing, reasoning and communication, and to assist the student in the selection of a program. If the assessment reveals skill deficiencies, the student will be advised to complete appropriate refresher courses. Students may be eligible for financial aid during this period.

When the assessment indicates that the student will be better served in a different setting, that individual may be referred to an appropriate community resource offering the needed assistance. The applicant may enter the admissions process at a later date, following completion of skills upgrading.

Assessment testing may be waived if the applicant submits either:

- (a) an official transcript from an accredited post-secondary institution indicating successful achievement;
- (b) acceptable alternative standardized test scores (i.e., SAT, ACT).

The college reserves the right to guide the enrollment of students in particular programs or courses on the basis of past academic records, academic counseling and assessment.

Students seeking admission to certain health occupation programs may be requested to take part in specific pre-enrollment assessments and/or interviews to fulfill college or external agency requirements. Certain prerequisites such as health examinations may be required before enrolling in specific programs or courses.

Basic Skills Advancement Program Services

To ensure that every student has the opportunity to be successful, Ivy Tech offers Basic Skills Advancement Programs. These supplemental programs are designed for students enrolled in regular programs or courses at the college who are encountering academic difficulty or who have been identified as having encountered academic difficulty in the past. Services provided through the Basic Skills Advancement Program include diagnostic testing and assessment, career counseling, course placement services and instruction.

The need for these services may be identified at the time of admission. However, a student may use any or all services upon encountering academic difficulty during a course of study. Professional basic skills advancement instructors and laboratory technicians provide supplemental instruction in the areas of math, communications, sciences, human relations, GED preparation, English as a second language (ESL) and study skills. Delivery of instruction may be in the form of a basic skills advancement course in a classroom setting, one-on-one tutorial assistance, or a self-paced study in the Basic Skills Center. For further information about the college's Basic Skills Advancement Programs, contact the Office of Student Services or the Basic Skills Center.

Readmission

Should a course of study at Ivy Tech be interrupted, students may request readmission at a later date. This may be accomplished by contacting the Office of Student Services. Information on eligibility for financial aid will be available to returning students.

Limited Admissions Enrollment

Occasionally, the number of students admitted and enrolled in programs and/or courses may be limited by college resources or facilities--including available lab equipment and related support or the number of available health program clinical work stations. The Office of Student Services should be contacted regarding programs which have limited access.

Admission Procedures and Support Documents—Degree Objective

1. The college requires all students to complete the student admission form.

College Information and Services

2. Proof of high school graduation or GED completion is required for admission into a program leading to a certificate or a degree. The high school graduate or individual who has the GED should request the secondary school or testing center to send an official copy of the transcript or GED certification to the Admissions Office by the end of the first semester of attendance.
3. Career counselors/academic advisors are available to assist students in selecting a course of study at Ivy Tech.
4. The college requires that program-declared students provide acceptable standardized test scores or participate in the college's assessment program. **Note:** Students who have neither a high school diploma nor a GED, he/she *must* receive satisfactory scores on the college's assessment to be eligible for financial aid.
5. A student who wishes to transfer credit to Ivy Tech from another college must provide Ivy Tech with an official copy of the grade transcript from that institution before enrolling for courses if applying for financial aid, or no later than halfway through the first semester of enrollment or re-enrollment.
6. The college requires a health examination for certain programs.

Advanced Standing

Prior education and formal training may be considered for advanced placement. Students may be allowed to enter programs with advanced standing. In many cases, credit may be awarded through transfer of credit from other post-secondary institutions, challenge examinations, the College Level Examination Program (CLEP) or military experience, with the training period shortened proportionally.

Tech Prep

The college provides opportunities for high school students to explore technical careers and to achieve advanced standing through high school courses for which Ivy Tech has agreed to give college credit. Interested students should contact their high school counselor or local Ivy Tech campus.

Transferring to the College

The college encourages students who previously attended other recognized colleges and universities, adult education programs and high school vocational technical programs to forward transcripts to Ivy Tech by the midpoint of the first semester of enrollment or re-enrollment for consideration for transfer of credit and/or advanced placement. Students are responsible for

providing pertinent course descriptions and/or copies of the college catalog(s) if further documentation is needed to facilitate the review. The college will be glad to assist individuals with evaluation of prior educational experiences. The college reserves the right to refuse admission or to conditionally admit those students who were dismissed for disciplinary reasons from other colleges or universities.

Transferring to Other Colleges

It is the right and responsibility of the institution to which students may wish to transfer to decide whether to accept credits from another institution. The associate in applied science degree (AAS) and the certificate programs offered by Ivy Tech are intended to prepare students with the necessary knowledge and skills to enter or advance in the workplace. However, institutions may permit a student to transfer credit for courses completed as part of an AAS or certificate program. Ivy Tech offers associate in science (AS) degree programs which are designed to transfer. Students interested in transfer programs should check with the Office of Student Services.

International Students

International students must meet college admission standards and certain other requirements. International students should apply for admission to Ivy Tech at least 90 days prior to the beginning of the term they wish to attend. International students must provide high school transcripts, which are subject to an equivalency examination.

International students also must provide proof of adequate financial support for college fees and living expenses for each year while attending Ivy Tech. International students should submit a letter from an appropriate sponsor, government official or bank official stating that sufficient funds are available to cover the cost of the student's education and that these funds will be available to the student while attending college in the United States.

Physically Challenged Students

College programs and facilities are designed to be accessible to physically challenged students. Each campus has designated parking and special restroom facilities for these students. Support services also will aid physically challenged students with career planning, financial aid, personal counseling and placement. The college staff works with the Department of Vocational Rehabilitation and other service agencies to assist physically and psychologically challenged students through available local community resources.

Physically challenged students are urged to contact the Office of Student Services for assistance.

Student Orientation

All new degree students are encouraged to participate in a student success seminar/orientation program prior to or during the first week of classes.

Orientation is designed to assist students in making the transition to a college environment. Topics include student services, financial aid, business services, instructional programs, college activities, and policies and procedures.

Test-Out Procedures

Test-out policies vary from program to program. Students wishing to test out of a course should contact the program advisor. A fee of \$10 per credit hour may be charged for the tests.

The general guidelines for test-out are:

1. Test-out examinations should be taken before registering for the course for which the test-out is attempted.
2. Test-out examinations are normally completed at one sitting (unless the test is offered in two parts—i.e., lab and written exams).
3. Test-out credits are not included in credit computations for financial aid programs or student grade point averages.

Registration

Registering for Courses

The registration process includes financial aid and program counseling, selection of courses and payment of fees. Newly admitted students will be notified when to register for their first classes. Specific days are set aside for registration before the beginning of each semester. Students should seek assistance in course selection from faculty advisors or counselors in the Office of Student Services before registering for classes. The Office of Student Services of each Ivy Tech region can supply information concerning registration.

Note: Students are registered when fees have been paid.

Open/Late Registration

Open registration is held before the beginning of the term. Registration after the first day of classes each term is considered late. Students may register after the first week of classes with the permission of the instructor. However, a late registration fee may be assessed any time after the first day of classes. For further information, contact the Office of Student Services.

Drop and Add

Courses may be dropped or added in the first two weeks of the regular semester. Students may be eligible for a full or partial refund of the assessed fees for courses dropped in the first four weeks of the semester. Courses are not officially dropped until the necessary forms have been completed and returned to the Office of Student Services. After the first week of the semester, students must receive the permission of the instructor to register for an added course.

Student Withdrawal

From the beginning of the second week to the end of the week marking the completion of 75 percent of the course, a student may withdraw from a course by filing a withdrawal form at the Office of Student Services. (Students may be eligible for a full or partial refund of fees.) Records of students withdrawing from courses indicate a "W" status rather than a grade when the withdrawal process is completed. Withdrawal is complete when the necessary forms have been submitted to the Office of the Registrar. A student who ceases to attend class after the last day to withdraw will receive a grade commensurate with course requirements.

Note: Withdrawing from class may affect or cancel financial assistance. Further information is available from the Office of Student Services.

College Fees

The college seeks to provide quality education at the lowest possible cost. General fees are based on the number of credit hours for which the student has registered. Out-of-state students pay an additional fee per credit hour. For a current schedule of fees and further information, contact the Office of Student Services.

Additional Expenses

The following additional expenses may apply, depending upon the program of study:

- *Books:* All students are expected to purchase the textbooks for their respective programs. The cost of books varies by class.
- *Tools:* The college furnishes major equipment items for instruction. However, in many programs or courses, students must furnish additional hand tools and equipment.

College Information and Services

- **Uniforms and Other Special Equipment:** Several programs require students to furnish uniforms and special safety clothing.

Payment of Fees

All enrolled students must make arrangements at the time of registration to pay all applicable fees. A student is officially registered and allowed to attend classes when all fees have been satisfied.

Refund Policy

Students choosing to drop or withdraw from a course or courses must notify the college in writing using the drop-and-add or withdrawal form. The fee refund for voluntary withdrawal from a class, when applicable, will be processed only after the student files a college drop-and-add or withdrawal form with the Office of Student Services.

The college will refund student fees, with the exception of the late registration fee, on the following schedule for a regular semester:

From registration to end of first week of semester	100% refund
To end of second week of semester	75% refund
To end of third week of semester	50% refund
To end of fourth week of semester	25% refund
After fourth week of semester	No refund

This schedule is based upon a 16-week semester calendar. Classes based on different calendars will have different refund schedules. The effective date for calculating the fee refund is the date of written notification on the drop-and-add form. Certain other fees may be refundable. Further details are available from the Office of Student Services. All refunds will be issued by check and mailed to the address shown on the student's registration form. Cancellation of credit courses by the college will result in a total refund of fees collected for those courses.

Financial Aid

Ivy Tech offers various types of financial aid to students who need assistance to continue their education. Students are encouraged to carefully survey the available financial aid options. Students must be accepted for

admission to the college in an eligible program. Financial aid is available to eligible students regardless of age. The Financial Aid Office will provide information concerning student aid programs for both full- and part-time students.

Some financial aid programs are administered by the college Financial Aid Office under policies and guidelines established by the state and federal governments. Other programs are administered directly by a state or federal agency or outside organization. A few programs may be available on a regional basis only. Eligibility for most financial aid at Ivy Tech is based upon demonstrated financial need. To qualify for any form of financial aid, students must complete the Free Application for Federal Student Financial Aid (FAFSA) and an Ivy Tech Financial Aid Information Form each year, and meet permanent resident status, draft compliance and satisfactory academic progress requirements. Additional information concerning federal, state and college financial aid is available from the Financial Aid Office.

The following forms of financial aid are available to Ivy Tech students:

Hoosier Scholar Program

The State Student Assistance Commission of Indiana may award from one to three scholarships per high school, based on the size of the graduating class. Candidates are nominated by their high schools. The Hoosier Scholarship is a one-time, non-renewable merit award in the amount of \$500 for one academic year.

Higher Education Award Program (HEA)

Residents of Indiana may apply for Higher Education Awards (formerly called State Grants). Applicants must file the FAFSA by March 1 preceding their enrollment for the following fall semester. Awards are based on demonstrated financial need. Recipients of HEA awards must be enrolled full-time (12 hours or more per semester) to be eligible to receive the grant.

Ivy Tech and Foundation Scholarships

Ivy Tech awards scholarships provided by Ivy Tech Foundation and local civic and service organizations. Students should contact the Financial Aid Office for details concerning availability of these scholarships.

Pell Grants

Pell Grants represent the largest federal student assistance program which benefits Ivy Tech students. Since the grant is based on the student's need, enrollment status and cost of education at Ivy Tech, the amount varies from semester to semester. To apply, the student should file the Free Application for Federal Financial Student Aid (FAFSA) available at any Ivy Tech Financial

College Information and Services

Aid Office. The Pell Grant applicant will receive a copy of the Student Aid Report in the mail. The Student Aid Report must be presented to the Financial Aid Office before or at the time the student enrolls in order to determine the amount of the grant.

Supplemental Educational Opportunity Grant (SEOG)

SEOG is a federally funded student aid program which enables colleges to make grants to financially needy students to assist in the payment of educational costs. Applicants must file the FAFSA to establish eligibility. Awards vary each year.

Ivy Tech Grant Programs

Ivy Tech provides an extensive grant program. Each campus has a fee remission grant fund for students with special needs arising from unusual circumstances. Fee remissions are available under four separate programs:

Ivy Tech Grant	Awarded on basis of need
Ivy Tech Award	Awarded on basis of merit
Ivy Tech Part-Time	Awarded to first-time students enrolling in 1-5 credit hours
Out-of-State Fee Remissions	Available in certain cases to deserving students who reside in other states but live in counties contiguous to Indiana

Employment and Loans

Federal College Work Study Program

The Federal College Work Study Program provides part-time employment to students who need financial assistance. Job assignments may be within the college or in public non-profit agencies in the community. Students are required to submit the FAFSA to the Financial Aid Office, which makes the job placements taking into consideration the amount of students' financial need, class schedule and family or personal obligations. The starting hourly rate will be at least the federal minimum wage. Employment may consist of, but is not limited to, secretarial and clerical office work, maintenance or custodial work, duties in the Learning Resource Center (LRC) or work as lab assistants. Where possible, students are offered work study assignments in areas related to their career objectives.

State of Indiana Summer Work Study Program

Ivy Tech participates with the State Student Assistance Commission of Indiana in a state-funded Summer Work Study Program for full-time, financial aid eligible students who are residents of Indiana. The purpose of this program is to help students who have received state-funded grants and scholarships to meet their remaining need.

Stafford Loans

Students who attend classes at least half-time may obtain low interest loans from commercial banks, savings and loan associations or credit unions. The federal government determines the interest rate on a Stafford Loan and pays interest to the lender during the time students are in school, provided they meet certain criteria set by the federal government.

Students begin repayment of their loans six months after graduation or when their class load falls below six credit hours. Applications for Stafford Loans may be obtained from banks, savings and loan associations, credit unions or other financial institutions. The Financial Aid Office must complete a portion of the loan application and approve it before it can be forwarded to the lender for processing. Loan counseling and testing are required before applications are processed.

Parent Loan for Undergraduate Students (PLUS)/SLS

The PLUS/SLS program assists students and parents in financing education when all other types of financial assistance have been denied or exhausted. Repayment begins within 30 to 60 days after the loan is made. The federal government does not subsidize interest on these loans.

Selected Reserve Educational Assistance Program

Members of the U.S. Army Reserve, Naval Reserve, Air Force Reserve, Marine Corps Reserve, Army National Guard or Air National Guard may be eligible for benefits under Chapter 106 of the VA Regulations. Eligible students should contact the Office of Financial Aid for additional information and applications.

Child of Disabled Veteran (CDV) Benefits

Children of deceased or disabled veterans may be eligible for veterans' benefits. Students should contact the Office of Student Services for further information and assistance in applying for benefits.

Indiana residents who are children of deceased or disabled veterans, or of veterans awarded the Purple Heart, may be eligible for a fee waiver at Ivy Tech if the parent's death, disability or Purple Heart award occurred as a result

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of military service during wartime. Inquiry concerning this benefit may be made at the Financial Aid Office.

Police and Fire Fighters Orphans and Spouses Benefits

Children and spouses of deceased, regularly paid, law enforcement officers and fire fighters are eligible for a fee waiver if the death occurred in the line of duty. Children and spouses of volunteer firefighters and city or county reserve police officers who died in the line of duty also are eligible for a fee waiver. The fee waiver is granted only to full-time students under the age of 23. Certification from the appropriate agency must be presented to the college in order to obtain the fee waiver.

Vocational Rehabilitation

Students with disabilities that may be considered barriers to employment may qualify for benefits through the Family Social Services Administration. The local office of the Division of Disability, Aging and Rehabilitative Services, establishes the conditions of eligibility and awards assistance based on individual need. The division expects students to apply for the Pell Grant and other forms of financial aid through the school. However, if these resources are not sufficient to meet their needs, the division may provide additional funding. Further information is available from the local division counselor.

Job Training Partnership Act (JTPA)

Students from economically disadvantaged backgrounds may be able to obtain assistance in acquiring vocational training or in upgrading occupational skills through the Job Training Partnership Act. For further information, contact the local Private Industry Council (PIC) Office.

Trade Readjustment Act (TRA)

The Trade Readjustment Act provides full tuition and fees, books and supplies to eligible students. Students should check with their local Department of Employment and Training Office to determine eligibility.

Employer Funded Education

Many employers fund in full or in part courses taken at Ivy Tech when the training offered relates to the employee's job responsibilities. Interested students should contact their employer to determine if such arrangements can be made.

Union Training Funds

Many unions have training funds available for members. Interested students should contact their union regarding availability of training funds for use at Ivy Tech.

Veterans' Benefits

Students who served in the armed forces may be eligible for veterans' benefits. The Veterans Administration and, in many instances, the Department of Defense, determines eligibility. The amount of monthly educational allowance will depend on enrollment status and individual entitlement of each veteran.

Ivy Tech is obligated by law to evaluate past military and civilian training and education and award credit where appropriate. To accomplish this evaluation, veterans are obligated to provide the college with the necessary documentation of prior training and education. The evaluation must be completed within the time frame dictated by law and should be accomplished as soon as possible. Failure of the veteran to cooperate could result in VA benefits being terminated, retroactive to the first day benefits were received. The award of credit for previous training may allow the college to shorten the training program proportionately. The veteran should meet with the campus Veteran Affairs Coordinator at the earliest possible date. The veteran is responsible for attending classes and making reasonable progress toward an educational objective.

Application Procedures for Financial Aid

Application forms are available in the Financial Aid Office at all Ivy Tech campuses. Because application procedures, deadlines, eligibility regulations and refund policies vary with different types of student aid programs, interested students are encouraged to contact the Financial Aid Office at their earliest opportunity. Students should allow six to eight weeks for processing most financial aid applications. Students are encouraged to apply for assistance at any time. The fall semester marks the beginning of the financial aid award year.

Financial Aid Appeals

The following steps are recommended to students who feel they have received unfair treatment in the financial aid process.

1. Schedule a personal conference with the manager of Financial Aid to discuss and resolve the issue.
2. If Step 1 is unsatisfactory, schedule a consultation with the director of Student Services.
3. If Step 2 is unsatisfactory, schedule a conference with the Student Status Committee. This committee will make a

recommendation to the chief administrative officer to resolve the issue.

Student Records

Ivy Tech maintains an educational record for each student who is or has been enrolled at Ivy Tech. In accordance with the Family Educational Rights and Privacy Act of 1974, as amended, the following student rights are covered by the act and afforded to all students at Ivy Tech:

1. The right to inspect and review information contained in the student's educational records.
2. The right to challenge the contents of the student's educational records.
3. The right to a hearing if the outcome of the challenge is unsatisfactory.
4. The right to submit an explanatory statement for inclusion in the educational record if the outcome of the hearing is unsatisfactory.
5. The right to prevent disclosure, with certain exceptions, of personally identifiable information.
6. The right to secure a copy of the institutional policy.
7. The right to file complaints with the Department of Education concerning alleged failures by Ivy Tech to comply with the provisions of the act.

Each of these rights, with any limitations or exceptions, is explained in the Student Services Policy and Procedures Manual, a copy of which may be obtained in the Office of Student Services.

At the college's discretion, directory information may be provided in accordance with the provisions of the act without the written consent of the student unless the student requests in writing that such information not be disclosed (see below). The items listed below are designated as directory information and may be released for any purpose at the discretion of Ivy Tech unless a request for non-disclosure is on file.

Category I. Name, address, telephone number, dates of attendance.

Category II. Previous institution(s) attended, major field of study, awards, honors, degree conferred.

Category III. Past and present participation in officially recognized sports and activities, physical factors of athletes (height and weight), date and place of birth.

Students may request the withholding of directory information by notifying the Registrar's Office in writing, specifying the categories to be withheld, within ten (10) calendar days from the first scheduled day of the term. Ivy Tech will honor the request for one term only. Therefore, the student must file the request on a term basis. The student should carefully consider the consequences of any decision to withhold any category of directory information. Regardless of the effect upon the student, Ivy Tech assumes no liability for honoring a student's request that such information be withheld. Failure on the part of a student to request the withholding of specific categories of directory information indicates the student's approval of disclosure.

In addition, student records are held in security by the college. Transcripts on file with the college from high schools and other institutions of higher education cannot be released by Ivy Tech. A student needing a transcript from high school or another college should request it directly from that institution. The Registrar's Office will assist students wishing to see and review their academic records and student files. Any questions concerning the student's rights and responsibilities under the Family Educational Rights and Privacy Act should be referred to the Office of the Registrar.

Dependency Provision

Ivy Tech reserves the right, as allowed under the Federal Educational Rights and Privacy Act of 1974, to disclose educational records or components thereof *without written consent* to parents of dependent students as defined according to the Internal Revenue Code of 1954, Section 154 (as amended). A certified copy of the parent's most recent federal income tax form establishing the student's dependency status shall be required before any educational records or components thereof will be released to the parent of any student.

Academic Grading

The academic grading system has both grades and status codes, both of which are explained in greater detail later in this section. Grades reflect the quality of performance and level of competency achieved by students who complete a course. Formal grades are assigned at the end of each enrollment period. Instructors determine and assign grades and status based on objective appraisal and evaluation of the student's performance. Semester grade reports are sent to each student. The semester grade report is not sent to students who still owe fees.

In all courses, the quality of the student's work determines the grade earned. For some courses, quantity of work, speed of work, or both, also are considered in determining the grade. Class participation also may be considered by instructors in awarding grades. In certain instances, a status code appears on the student's record in place of a grade. Status represents a condition to which no letter grade can be assigned.

Grades

The quality of student performance or competency level, as determined by the instructor at the completion of a course, is indicated by a letter grade of A, B, C, D or F. Ivy Tech does not use pluses and minuses as a part of its grading system. Each designation has a numerical value per credit hour, referred to as "quality points." The meaning and quality point value per credit hour of each letter grade are shown in the table below:

Status		Quality Points Per Credit Hour
A	Excellent	4
B	Good	3
C	Average	2
D	Below average	1
F	Failure	0

Status Codes

Status codes describe the state or condition of a course on the student's record for which a grade has not been awarded. Status code indications carry no quality points. The types of status codes and the symbols used to indicate them are shown on the next page.

Status

I	Incomplete
AU	Audit
S	Satisfactory
U	Unsatisfactory
V	Verified Competency
NW	No-Show Withdrawal
W	Withdrawal

These non-grades are used for the following reasons:

I—Incomplete

“I” designations are received by students who have actively pursued a course and are doing passing work at the end of the course but who have not completed the final examination and/or other specific course assignments.

To remove an “I” designation, a student must meet with the instructor and make arrangements to complete course requirements in a specified period not to exceed 30 days beyond the start of the following term. The instructor must submit the grade within 31 calendar days of the beginning of the following term in which the student received the “I” designation.

AU—Audit

Audit (AU) status indicates enrollment in a course for which no grade or credit is awarded. The fees for audited courses are the same as those for courses taken for credit. Audit status must be declared no later than the end of the first week of classes with approval of the instructor or program chairperson.

NW—No-Show Withdrawal

Instructors authorize the registrar to withdraw a student from any course for which the student did not report for the first two weeks of the semester and failed to notify the instructor of intent to continue. This administrative action is reflected on the official class list. No refund is processed. A petition for a refund with documentation for extenuating circumstances can be filed with the Business Office. Students can petition to be reinstated by receiving the approval of the instructor and completing the drop/add process.

W—Withdrawal

A “W” status code will be used for student and academic withdrawals. Student Withdrawal (W) is a terminal status referring to voluntary student withdrawal beginning at the start of the third week of the course up to the end of the week marking the completion of 75 percent of the course. To be

considered officially withdrawn from a course, the student must file a withdrawal form with the Office of the Registrar. After 75 percent of the term has elapsed, a student may withdraw (with the same result as indicated above) only if documented extenuating circumstances are submitted to and approved by the chief academic officer or his/her designee.

S—Satisfactory

The "S" indicates satisfactory completion of course work in situations where either a status of satisfactory or unsatisfactory (pass/fail) has been arranged by prior agreement. Requests for this type of grading must be declared at time of registration.

U—Unsatisfactory

The "U" indicates unsatisfactory completion of course work in situations where either a status of satisfactory or unsatisfactory (pass/fail) has been arranged by prior agreement. Requests for this type of grading must be declared at time of registration. The "U" differs from an "F" in that quality points are not computed.

V—Verified Competency

The "V" indicates satisfactory completion of course work in situations such as test-out, credit for experience or training, College Level Examination Program (CLEP), etc. Credit gained through this method may be used to satisfy degree requirements. This status is approved by the chief academic officer upon recommendation of a faculty advisor following completion of necessary verification and documentation of competency.

Credit Hours

Credit is described in semester hours (the number of credits taken per semester). The number of credits is determined by the demands of the course, course work and by the number of contact hours—the hours actually spent in the classroom or laboratory.

Credit Hours/Load

A credit hour represents one hour of lecture, two hours of laboratory or three hours of clinical instruction per week for the semester. A three-credit-hour lecture course, for example, meets 48 hours during the semester (3 hours/week x 16 weeks). An average full-time semester class load in most Ivy Tech programs consists of 12-15 credit hours. A class load of more than 17 credit hours requires approval of the chief academic officer or a designee.

Enrollment Status

Enrollment status is determined by registered total semester credits:

Full-time student	12 or more credits per semester
3/4 time	9-11 credits per semester
1/2 time	6-8 credits per semester
Less than 1/2 time	1-5 credits per semester

A first-year student, by definition, is one who has completed 30 or fewer semester credit hours. A second-year student is one who has completed 31 or more semester credit hours.

Quality Points

Quality points are numerical values indicating the quality of student performance in credit courses: A=4; B=3; C=2; D=1; F=0. The quality points earned for a course equal the quality point value times the number of credits. A student who earns an "A" in a four-credit course earns 16 quality points: the quality point value (4) x the number of credits (4) = the total quality points (16).

Grade Point Averages

The Grade Point Average (GPA) is a numerical indication of the student's performance in all courses in which quality points can be earned. The GPA is calculated by dividing the number of quality points earned by the number of credits earned. The term and cumulative GPA, calculated to three decimal places, will appear on each grade report.

Under extenuating circumstances, a student may petition the Academic Status Committee to exclude hours of coursework from the cumulative GPA calculation. Courses excluded from the cumulative GPA calculation as a result of a petition will not be counted as earned and cannot be used to satisfy program requirements for degree-declared students. Contact the Office of Student Services for additional information.

Improving a Grade

Students, with the approval of faculty advisors, may attempt to improve D or F grades by repeating courses (allowable once in most programs). Financial aid recipients, however, should review their situations carefully since payment for repeated courses can be disallowed. Permanent student records contain complete files on all activity. The student's grade point average will reflect the highest grade earned.

Dean's List

The Dean's List, prepared and published each semester, gives recognition to students who achieve a minimum 3.50 grade point average or higher with no Fs while earning 12 or more credits during the semester.

Grade Reports

Final grades are mailed to the address on the registration form. Grade reports are not sent if there are outstanding financial obligations to the college.

Attendance

Regular attendance is expected at scheduled class meetings or other activities assigned as part of a course of instruction. Attendance records are kept by instructors. When personal circumstances make it impossible to attend scheduled classes and activities, the college expects students to confer with instructors in advance. Instructors can offer students the option of making up the material missed. When circumstances are unforeseen, students should consult with instructors to arrange make-up work, if possible.

Absences may be considered by instructors in awarding grades and considering involuntary withdrawal. Students who must interrupt their Ivy Tech training to fulfill Reserve and National Guard annual tour requirements should present official military orders to their instructors prior to departure for duty. Students are not excused from completion of the course work and should make arrangements with their instructors to complete all work.

Standards of Progress

Students who have declared a certificate or degree objective and who have 15 or more cumulative credit hours attempted must maintain a 2.00 minimum cumulative grade point average (GPA) to remain in satisfactory academic standing. Students receiving financial aid must demonstrate satisfactory progress toward completion of a program within a specified time frame, based on their enrollment status. Students also must successfully complete the minimum number of credit hours required for that status each semester. All students are expected to maintain a cumulative 2.00 GPA to be eligible for graduation. Questions about standards of progress and academic standing should be addressed to the Office of Student Services.

Special Problems

The Office of Student Services is available to help with special problems, granting exceptions and filing grievances (see Student Grievances). Special problems, exceptions and grievances are ultimately the responsibility of the chief administrative officer of the region, designated staff and committees.

Graduation

The associate in science degree, the associate in applied science degree or technical certificate is awarded by the college to students who meet graduation and certification eligibility requirements. Graduation ceremonies are held once a year. Graduating students are charged a fee to cover the cost of the ceremonial cap and gown.

A student is considered eligible for graduation when requirements for graduation and certification have been fulfilled. Each student entering the final semester prior to graduation must complete an application for graduation. The application will be certified by the student's program advisor and forwarded to the Office of Student Services, where the appropriate diploma will be prepared. Graduating students may be asked to participate in outcomes assessments.

To graduate with an associate in science degree, an associate in applied science degree or a technical certificate, the student must:

1. Attain a minimum grade point average of 2.00 in the required technical and general education courses;
2. Earn 15 credits as a regular student of Ivy Tech, rather than by test-out or other means of advanced placement;
3. Successfully complete the required number of credits; and
4. Satisfy all financial obligations due the college.
5. Satisfy program accreditation standards that may have additional requirements.

Student Support Services

Career Counseling

Each campus provides counseling to all interested students. Students may obtain individual counseling and/or assessment to assist them in identifying their abilities or occupational interests. Counseling and assessments also are helpful in developing education and career plans and compiling occupational outlook data. Students are encouraged to seek assistance in selecting an occupation and the necessary training from the Office of Student Services.

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In addition to the counseling program offered by the Office of Student Services, the college uses a faculty advisor system. On admission, each degree student is assigned a faculty advisor whose purpose is to:

1. Assist the student in course selection and program planning,
2. Guide the student in meeting the requirements for graduation as prescribed by the college, and
3. Ensure that appropriate technical and general education courses are included in the chosen course of study.

Placement

Candidates for graduation who desire job placement assistance may contact the Placement Office, which will:

1. Advise candidates of the college placement services.
2. Provide occupational information, including employment trends, and local and state occupational outlook data.
3. Assist the registered candidate in preparing a packet of credentials for use in finding a job. The packet may include:
 - a. A resume of the candidate's education and employment experience, and
 - b. Personal letters of recommendation verifying the student's employability.
4. Create folders containing original copies of the candidate's credentials for all registered candidates, and
5. Prepare copies of credentials released by the candidates for referral to prospective employers. Alumni may update their credentials whenever they wish to use the placement service.

Students or alumni registered with the Placement Office will be informed of employment opportunities known to the Placement Office. Employers who register with the Placement Office are given the names of all qualified candidates without regard to sex, race, age, national origin or disability. Registered students or alumni are eligible for interviews with appropriate prospective employers.

Library

Libraries at each campus provide access to materials, information and services that support student educational needs. In addition, libraries have career exploration materials, provide inter-library loan services, stock general and technical periodicals and leisure reading, and audio-visual materials and equipment.

College Bookstore

Each campus maintains a bookstore where students may buy textbooks and supplies. College sweaters, jackets, souvenirs and other items also are available for purchase.

Student Organizations

Organizations and Activities

The college recognizes the educational, recreational and social values of student organizations and extracurricular activities. Students are encouraged to participate in any or all phases of the student activities program as long as participation does not interfere with studies.

All student organizations operate under the policies and guidelines set for the college by the State Board of Trustees. Approval by the Student Senate and the administration is required of all student organizations seeking to make use of college facilities. All approved organizations must be open for membership to all eligible candidates and must make available to the Student Senate records of officers, membership and financial transactions.

Student Senate

Students in each region are provided opportunities to participate in student government through the Student Senate. The Student Senate is the representative governing body of the students. Student Senate representatives are elected or selected according to the by-laws of each regional Student Senate constitution and serve as stated in those bylaws. The student body membership may consist of representatives of the first-year class, the second-year class, each program area and an advisor as established in the by-laws.

The Student Senate was established by students to encourage participation in student government and to promote college spirit and recognition. The Student Senate exercises the authority, unless otherwise delegated, to legislate on student matters, subject to the approval of appropriate college administrative offices.

The constitutions of all student organizations must be approved by a quorum of the Student Senate, consisting of a simple majority of the total membership and one staff advisor or as otherwise stated in the by-laws.

The functions of the Student Senate include:

1. Communication of bona fide concerns of the student body to appropriate college officials with suggestions for improvement.
2. Approval of student organizations beneficial to student life and worthy of being part of the college.
3. Assurance that copies of the constitution, by-laws and statement of purpose and objectives of each recognized student organization are on file in the Office of Student Services.
4. Referral of student grievances concerning disciplinary matters or student status to the Committee on Student Status and referral of other types of student grievances to appropriate college officials.
5. Planning and conducting appropriate extracurricular student activities.
6. Submission of student activity budgets for review and approval by the regional officials.

Phi Theta Kappa

Phi Theta Kappa is a national honor fraternity for two-year colleges. Its purpose is to recognize and promote academic excellence. This is done by providing leadership development opportunities for service in chapter activities on campus and regional Phi Theta Kappa activities. Membership in Phi Theta Kappa is by invitation only and is based on a minimum grade point average as well as completion of a specified number of semester hours. Contact the Office of Student Services for further information.

Intramural Sports

College sports activities consist of intramural sports sponsored by the Student Senate. Leagues can be formed when student interest justifies their organization. All sports activities of the college must be approved and sponsored by the Student Senate and the administration.

Class Organizations

The primary purpose of class organizations is to promote class-wide social activities and sports functions. Each first- and second-year class may elect a class president, vice president, secretary-treasurer, class reporter and representatives-at-large for the Student Senate. Class organizations must be sponsored by the Student Senate.

Clubs

Students wishing to organize hobby, social or special interest clubs should submit proposals to the Student Senate, which will determine whether sufficient interest exists. The Student Senate is authorized to charter the club upon approval by the administration. Each club must have the following elected officers: president, vice president, secretary-treasurer, club reporter and a Student Senate representative. Each club must also have a staff advisor.

Social Activities

All group activities of the college must be approved and sponsored by the Student Senate and the administration. Classes, clubs and other groups should plan and conduct social activities pertaining specifically to their members. The Student Senate organizes and conducts social activities and gatherings in which all students and their guests may participate.

Professional and Trade Societies

Student chapters of various professional and trade societies will be formed in the same manner as other student organizations and are subject to the same requirements.

Housing

While Ivy Tech is a commuter campus and does not operate residence halls, the Office of Student Services may be able to respond to questions concerning housing. Ivy Tech accepts no responsibility for locating, approving or supervising local student housing.

Student Parking

As part of registration, some campuses require students to register their motor vehicles and obtain a parking sticker. A special permit is required to park in handicapped spaces. Stickers are to be displayed in the vehicle while parked on campus, and students may park only in designated student parking areas. Vehicles improperly parked in areas reserved for the handicapped, visitors or others may be towed at the expense of their owners.

Student Insurance

For students registered in credit courses, the college provides accident insurance in a designated amount for injuries sustained while participating in college-sponsored activities. The activity must take place on college premises or on any premises designated by the college. Students are also covered while traveling to and from college-sponsored activities as a member of a group under college supervision. It is the student's responsibility to report injuries promptly to the instructor or to the Office of Student Services.

The insurance is for a specified minimum amount of coverage. It is not intended to replace insurance coverage students may already have. Students should review their own coverage. The master insurance policy issued to Ivy Tech is on file at the central administrative office. The description of the hazards insured, benefits and exclusions is controlled by the master policy. Students with questions may contact the regional Office of Student Services.

The college has made arrangements for Ivy Tech students to obtain health insurance. Insurance coverage is purchased directly from the insurance company by the student. Application forms and brochures explaining coverage and rates are available through the Office of Student Services during course registration periods. Coverages and rates are subject to change.

Emergency Closing of Campuses

Severe weather conditions or other emergencies occasionally make it necessary to close a campus. Each campus has designated local radio stations to announce information on closings.

Student Rights and Responsibilities

Student Conduct

The reputation of Ivy Tech in the community depends in large part upon the behavior of its students. Students enrolled at the college are expected to conduct themselves in a mature, dignified and honorable manner. Students are entitled to a learning atmosphere free from discrimination, harassment, sexual harassment or intimidation.

Students are subject to college jurisdiction while enrolled at Ivy Tech. The college reserves the right to take disciplinary action against any student whose conduct, in the opinion of Ivy Tech representatives, is not in the best interests of students or the college.

All Ivy Tech students are expected to abide by the following college rules of conduct. "Student" refers to a student, a group of students, a prospective student or a group of prospective students.

College Rules

1. *Alcoholic Beverages:* Under Indiana law, consuming, being under the influence of, or possessing intoxicating beverages on college property is not permitted.
2. *Illegal Use of Drugs:* Under Indiana law, being under the influence of, use of, possession of or distribution of illegal drugs is not permitted.
3. *Smoking:* Under Indiana law, all Ivy Tech buildings are classified as "non-smoking" facilities. Smoking is permitted only in designated areas.
4. *Assembly:* Assembly in a manner that obstructs the free movement of others about the campus, inhibits the free and normal use of the college buildings and facilities, or prevents or obstructs the normal operation of the college is not permitted.
5. *Signs:* Students may erect signs on campus or display signs or posters on designated bulletin boards after receiving written approval from the appropriate college official.
6. *Solicitation of Funds:* Individuals or organizations who wish to use campus facilities or plan to solicit funds on a campus must first obtain written approval from the appropriate college official.
7. *Arms/Deadly Weapons:* Under Indiana law, possession of firearms (except those possessed by police officers) is prohibited on college property or at any college-sponsored activity held elsewhere.
8. *Cheating:* Cheating on papers or tests is a violation of college rules.
9. *Counterfeiting and altering:* College policy states that copying or in any way altering any record, document or identification form used or maintained by the college is not permitted.
10. *Theft of Property:* Theft of personal or college property is a violation of college rules.

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11. *Vandalism:* Destruction or mutilation of Ivy Tech books, magazines, equipment or buildings is a violation of college rules.
12. *Use of College Facilities:* Students are permitted on campus during normal published Ivy Tech hours and at other times established in the college calendar. Students wishing to use college facilities at other times must request permission from the appropriate college official.
13. *Financial Responsibility:* Students must pay all fees, fines or loans in a timely manner.
14. *Motor Vehicles:* Students must comply with parking regulations. Handicapped parking spaces and visitors' areas are reserved for those purposes and vehicles improperly parked in those areas may be ticketed or towed at the expense of their owners.
15. *Harassment, Sexual Harassment and/or Intimidation:* Conduct causing alarm, threats of crimes against persons or their property or unwelcome sexual advances or requests for sexual favors violate law and college policy. Harassment or intimidation of persons involved in a disciplinary hearing or of persons in authority who are discharging their responsibilities also violate college policy. All such acts are not permitted by the college.

Violations

The college maintains jurisdiction over violations of any college rules, including those listed earlier and others which may be communicated to students. To protect students and Ivy Tech employees, violators shall be subject to disciplinary action by the college and, when possible, to prosecution by the appropriate law enforcement officials. Disciplinary actions against students thought to have violated Ivy Tech regulations shall follow the due process procedures which follow. Copies of student conduct regulations will be made available in written form to all students no later than the first day of instruction.

The following information provides students, faculty and staff with a set of guidelines to follow when College rules and regulations may be violated. Whenever possible, efforts should be made to solve conflicts or violations in an informal manner. All conflicts or violations need not result in formal hearings or proceedings.

Due Process

Students have the right of due process. Students are provided an opportunity to appeal any disciplinary decision and are required to sign a waiver if they choose to waive the right to appeal. In disciplinary cases, due process includes the following elements: entitlement to notice of charges, notice of possible penalty and opportunity to explain a defense to some authority.

Due Process Procedure

1. The student shall be notified by an appropriate college official that he or she is accused of violating a regulation.
2. The student shall be notified in writing that he or she may elect one of three courses of action:
 - a. The student may admit the alleged violation and request in writing that the administrative officer take appropriate action. A signed waiver which waives the right to appeal is required.
 - b. The student may admit the alleged violation and request a hearing before the Student Status Committee.
 - c. The student may deny the alleged violation, which results in automatic referral to the Student Status Committee and a hearing by that body.

Prior to the hearing, the student will be entitled to:

- i. Written notice of the time and place of the hearing, delivered at least 48 hours in advance.
- ii. A written statement of the charges in sufficient particularity to enable the student to prepare a defense.
- iii. Written notification of the names of the witness(es) directly responsible for reporting the alleged violation, or if there are no such witness(es), written notification of how the alleged violation was reported.

3. The student shall be entitled to:
 - a. Appear in person and present a defense to the Student Status Committee and call witnesses. If the student elects not to appear, the hearing shall be held in that person's absence.
 - b. Be accompanied by counsel.
 - c. Question the Student Status Committee and witnesses by directing questions through the chair of the committee.
 - d. An expeditious hearing of the case.
 - e. An explanation of any decision rendered.

Student Status Committee

A Student Status Committee is created to hear all cases related to the disciplinary status of students. Grievances of students as to their disciplinary status also may be heard by the Student Status Committee.

The committee will be composed of at least six members, including two full-time instructors and two administrative staff persons. The additional two members will be students designated by the Student Senate or the campus chief administrative officer or that officer's designee. The committee's review and subsequent disposition of formal complaint will begin no later than 30 days after receipt of a written complaint. The Student Status Committee shall keep a record of its actions on all complaints and file a copy in a student's academic file upon resolution of each case.

A student has the following rights:

1. Notice of actions and meetings at all stages of the formal complaint procedure.
2. An opportunity to be heard.
3. An opportunity to question witnesses at hearings.
4. An opportunity to have a representative present when presenting facts, being questioned or asking questions.

The campus chief administrative officer reviews the committee's recommendations and confirms or modifies them. This officer's decision is final.

Disciplinary Action

A student who violates college rules and regulations is subject to any of the following disciplinary actions:

1. Verbal reprimand;
2. Restitution of damages;
3. Restriction of privileges;
4. Withdrawal from a course, program or the college;
5. Suspension from the college;
6. Dismissal from the college.

Instructors, through the dean/director of instructional affairs, or other administrators through the director of student services, may recommend to the Student Status Committee that a student be withdrawn from a course, program or the college for disciplinary reasons. Students recommended for dismissal will be notified by their advisors and will be given an opportunity to be heard by the Student Status Committee before such action is final. Disciplinary dismissals from the College will be final only after review by the Student Status Committee and the chief administrative officer of the campus. Students dismissed for disciplinary reasons are not entitled to refunds.

Student Grievance Policy

1. The student should bring a complaint to the attention of that person's advisor. If the complaint is based upon perceived discrimination (race, creed, color, age, religion, sex, disability or sexual harassment), the student may bring the complaint to the campus affirmative action officer.
2. The advisor or instructor schedules a conference within 10 instructional days after receiving a notice of complaint.
3. A student who feels that a conference would be futile because of an advisor's involvement may request a conference with a department head, division chair or the dean/director of Instructional Affairs, as appropriate. This conference also will be held within 10 instructional days of the notice of the complaint.

4. If the complaint is not resolved to the student's satisfaction through this informal procedure, that person may submit the grievance in writing to the chief administrative officer.
5. The formal complaint brought by a student must:
 - a. Clearly state the facts giving rise to the grievance.
 - b. State the remedy sought by the complaining party.
 - c. Be signed and dated.
6. The Student Status Committee is responsible for review and disposition of any complaint it receives.
7. Formal grievance procedures may result in one of five dispositions. They are:
 - a. *Deny further action.* If the grievant cannot make a prima facie case, the matter will be dismissed and the grievant will be given the reason in writing. The grievant may resubmit a complaint once within 30 days providing additional information is submitted. If not, the decision is final.
 - b. *Fact-finding and mediation.* The committee on its own may investigate the allegation and attempt to mediate a mutually agreeable resolution with the parties. A signed agreement summarizing the issue and resolution should be generated if agreement is reached.
 - c. *Referral.* The complaint may be referred to a more appropriate forum for action.
 1. A complaint involving discrimination should be referred to the affirmative action officer to be initially processed under the college affirmative action plan. If a hearing is necessary, the affirmative action officer may return the matter with advice to the Student Status Committee for a formal hearing.
 2. If the committee believes a policy or procedure of the college is being legitimately challenged, it will refer the grievance to the chief administrative officer of the campus with an explanation of its concern.
 - d. *Remand complaint.* If it appears that there has been no legitimate informal attempt to resolve the matter and the

committee feels that such discussion might lead to resolution of the complaint, the matter may be referred to the student advisor or other appropriate staff person for review and discussion with the student. If resolved, a report to the Student Status Committee will be made by the staff person. The Student Status Committee will review the agreement reached with the student to assure that there was mutual agreement and understanding.

- e. *Hold formal hearing.* If a grievance cannot be resolved using the steps listed above, the committee may hold a formal hearing. At such a hearing, witnesses may be called, including the parties to the complaint. A recommendation then will be formulated and a report made to the campus chief administrative officer.

Reinstatement

If a student is dismissed from any site, campus or region of Ivy Tech, that individual is dismissed from the college. After one calendar year, the individual may apply for reinstatement by informing the director of Student Services at the site/region where the dismissal took place of intent to begin the reinstatement process. Application for reinstatement may be made at the Ivy Tech campus the individual hopes to attend. The Student Status Committee will act on the appeal within 30 days of its receipt. The recommendation of the Student Status Committee will be forwarded to the chief executive officer of the site, campus or region. The individual will render a judgment on the appeal. That judgment will be final.

Student Right to Know

The 1990 federal Student Right to Know Act requires colleges and universities to report to prospective and current students the persistence and graduation rates of full-time technical certificate and degree-seeking students. The graduation rate is based upon program completion within 150 percent of time usually required for a full-time student. For technical certificate students, this is the number of full-time students graduating in three semesters. For associate degree students, this is the number graduating in six semesters. Contact the Office of Student Services for further information.

Campus Security Information

To Report a Crime

Ivy Tech is required by federal law to report the frequency of criminal activity occurring on its campuses to current and prospective students, faculty, staff and parents upon request. Any student, prospective student, faculty or staff person who has been a victim of or a witness to a criminal activity which occurred on any of the facilities or grounds of any Ivy Tech campus is encouraged to report this act to campus security or to the Office of Student Services.

Hours of Operation

The normal hours of operation are posted at each Ivy Tech campus.

Security

Each Ivy Tech campus designates employees who are responsible for addressing security-related matters, and to whom criminal activity should be reported. If security staff members are not available, the activity should be reported to the Office of Student Services. The local police department also should be notified of any crime. College policy is to assist the police in any investigation.

Prompt and Accurate Reporting

All criminal activity should be reported accurately to Ivy Tech personnel and local police. Misrepresenting criminal activity or falsely reporting an incident could result in prosecution or college disciplinary action.

Responsibility

Ivy Tech campuses have low occurrences of criminal activity. However, safety precautions should be observed at all times. The college encourages all students, prospective students, faculty and staff to take the responsibility to help each other in situations where criminal activity occurs.

Crime Prevention Program

Ivy Tech is not a residential college. Students are encouraged to follow the same safety and precautionary measures they follow in their homes and in the community. The Office of Student Services will assist anyone interested in attending a seminar or program on crime prevention.

Off-Campus Housing

There is no off-campus housing endorsed by Ivy Tech.

Alcohol Violation

Under Indiana law, consuming, being under the influence of, or possessing intoxicating beverages on college property is not permitted. Students, staff or visitors in violation of this law face college disciplinary action.

Drug Violation

Under Indiana law, being under the influence of, use of or distribution of illegal drugs is not permitted. Local law enforcement authorities will be notified when instances occur.

Substance Abuse Counseling

The college refers students in need of special help with substance abuse problems to appropriate counseling agencies. Each campus has counselors on staff for crisis intervention, information dissemination and has established referral relationships with area agencies.

Incident Reports

A copy of each incident report is forwarded to the staff member designated to handle campus security-related issues. The director of student services also is supplied with a copy.

Annual Report

A copy of the annual report is available from the Office of Student Services.

Instructional Programs

In keeping with its mission and goals, the college serves persons with educational programs consistent with projected job requirements and personal interests. Ivy Tech programs complement secondary programs, four-year programs, and adult basic education programs. The purposes of Ivy Tech's programs are to develop competent workers for initial employment, upgrade the skills of those already employed and provide a foundation of thinking and analytical skills to meet the requirements of society's expanding knowledge base.

Ivy Tech programs are designed to meet the needs of students, accommodating those who wish to enroll in a few classes or a full degree program. A few classes in a planned sequence may comprise a career development certificate. Credit programs culminate in an associate in applied science degree, an associate in science degree, or a technical certificate.

The college's degree programs are offered in five divisions:

- *Business Division;*
- *General Education and Support Services Division;*
- *Health and Human Services Division;*
- *Technology Division;*
- *Visual Technologies Division.*

Short-term training is available in selected credit courses, in sequences of credit courses, and in custom-designed courses for local businesses and industries. Also available are contract training programs and non-credit institutional activities such as seminars, workshops and conferences.

In addition to program and custom-designed courses, Ivy Tech offers basic skills instruction for students who require academic support and need to develop study skills. Additionally, enrollment in certain basic skills courses is designed to prepare the student for the GED examination.

Associate in Applied Science (AAS) Degree Programs

Associate in Applied Science degree programs prepare students for careers, career changes and career advancement at the technician or technologist level. AAS programs may also prepare students for transfer to four-year institutions. These programs offer training in recognized technologies and specialties with emphasis on analysis, synthesis and evaluation. The program content, which is approximately 30 percent general education, provides both depth and breadth in conceptual and manipulative skills. The general education courses, offered in the areas of communications, humanities, mathematics, and life, physical and social sciences, equip students with the problem solving, technical and social skills to compete successfully in the job market. Other courses, determined regionally, provide flexibility to meet the specific needs of local employers.

Associate in Science (AS) Degree Programs

Associate in Science degree programs prepare students for careers and enable students who have an interest and ability to transfer Ivy Tech credits to cooperating four-year institutions. The degree requires the satisfactory completion of a program of study representing a planned progression of learning experiences. These programs emphasize cognitive skills and provide courses equivalent to those prescribed in the lower division of the receiving four-year college or university. Students should contact the Office of Instructional Services to receive information about transfer-oriented programs.

Technical Certificate (TC) Programs

Technical Certificate programs provide training in conceptual and manipulative skills for specific occupations. Each program contains a sequence of required courses in a recognized specialty within one of the technologies taught at the college. The program content is designed to develop competency in the comprehension of general and technical skills.

Career Development Certificates (CDC)

Ivy Tech provides short-term programs for individuals who desire to develop competencies in a specific area. These programs are less than 30 semester credits in length. Instruction is delivered through methods that include regular courses and specifically designed courses. Many of these courses are based on a sequence of learning experiences determined by a certifying state or national association or organization. Completion of certain short-term programs qualifies students to sit for certification examinations. The number and type of short-term programs vary among the Ivy Tech campuses.

Business and Industry Training Programs

Ivy Tech offers specialized training services for business and industry. Directors of business and industry training develop custom-designed programs and services to meet the training needs of local businesses. Through its training offices, Ivy Tech consults, designs, produces, conducts and evaluates training specifically designed to satisfy employer needs on a one-time or on-going basis. The directors work with business and industry, trade unions and community economic development groups to assess training needs and to deliver training when and where it is needed, often in-plant.

The services provided by the business and industry training programs help ensure that the skills of employees of Indiana firms are current with changing technology. Instruction that best meets a company's specific needs is delivered through methods that might include regular courses, short-term courses, seminars, conferences and labs.

With more than 25 years of experience in technical instruction, Ivy Tech has been and continues to be a leader in promoting Indiana's economic development by providing comprehensive training services to Indiana businesses and industries. Detailed information is available from the directors of business and industry training at Ivy Tech campuses.

Indiana Partnership for Statewide Education (IPSE)

The Indiana Partnership for Statewide Education is a collaboration of Indiana's colleges and universities committed to delivering higher education courses via distance education to all learners throughout the state. Some IPSE courses are offered via the Indiana Higher Education Telecommunications System (IHETS) television. Classes are delivered via satellite from college and university campuses to learning centers located throughout Indiana, many on Ivy Tech campuses. Other courses are delivered directly into student homes via cable television, public broadcasting, video tapes or computers. Most courses offered through the partnership are transferable among all seven of Indiana's public colleges and universities, as well as several private colleges and universities. Contact the director of student services for availability of courses.

Statewide Program Initiatives

Three new programs—General Technical Studies, Tech Prep and Apprenticeship Technology—have been added to the college's offerings. These programs have been developed to reach out to groups experiencing school-to-work or work-to-school transitions. They represent the college's commitment to expand educational opportunity to all Indiana citizens.

General Technical Studies Degree

The General Technical Studies Program provides an option for students who may not be ready to enter a degree program. As such, the program serves primarily as a beginning point for students as they define and meet their educational objectives. It is designed to meet the diverse needs of the students Ivy Tech serves. The program will:

- Provide an opportunity for students to correct skill deficiencies before enrolling in a technical degree program.
- Provide a program for students who have not selected a specific educational or career goal by the time they have entered the college.
- Allow students who are waiting for admission into a selective program to enter the college.
- Provide a directed program of career-oriented educational exploration to encourage an examination of occupational program areas.
- Increase student retention by providing a vehicle which promotes informed choices.

- Provide undecided students the opportunity to pursue coursework which will serve as a foundation for related one- or two-year programs while engaged in career exploration.
- Provide an opportunity for a student to pursue a one-year program of general technical studies.

The General Technical Studies Program is available at each of Ivy Tech's 22 campuses. Interested students should contact their local campus.

Tech Prep

Ivy Tech developed a statewide Tech Prep associate degree program in 1993. The purpose of Ivy Tech's Tech Prep program model is to enable Indiana high school students to enter into and complete a post-secondary technical program to learn the skills necessary to succeed in the workforce. There are three basic approaches to the program:

- Provide high school students with the information they need to prepare for college-level technical education, so students can enter directly into a technical program after high school graduation and avoid the need for costly and time-consuming remedial coursework;
- Provide high school students with opportunities for achieving advanced standing, so students who take advantage of this opportunity can complete a technical associate degree program in less than two years of full-time study; and
- Provide opportunities for students to complete an enriched course of study, so qualified students can pursue an advanced technology curriculum.

Tech Prep opportunities are available at each of Ivy Tech's 22 campuses. Interested students should contact their high school counselor or their local Ivy Tech.

Apprenticeship Technology

In 1993, Ivy Tech's State Board of Trustees, the Indiana Commission for Vocational and Technical Education, and the Commission for Higher Education approved the concept of a joint educational program between the college and local joint apprenticeship committees. Pilot Apprenticeship Technology programs were started in the fall of 1993. These pilots will operate for two years prior to implementation of the concept in other parts of the state.

Individuals who participate in the program become Ivy Tech students and have the opportunity to earn credit while moving through the program. The apprentice has the opportunity to earn a technical certificate or associate in applied science degree. The degree depends upon the local Joint Apprenticeship Training Committee agreement with the college. Credit is given for on-the-job work experience in accordance with guidelines commonly accepted by other institutions of higher education.



Business Division

"Ivy Tech has helpful instructors who know my business. My fellow students are interesting and eager to learn. We all work with state-of-the-art technology. Ivy Tech is a place where everybody is working toward one goal—success in our jobs."

—Ed Theis, Student

Business Division

The Business Division provides career education for individuals seeking employment and for those who are currently employed in business and business-related fields. Programs lead to an associate in applied science degree, an associate in science degree or a technical certificate. Opportunities to transfer credits to four-year college are available through associate in science degrees or through transfer of credit for selected individual courses. The Business Division also offers courses to students who are not seeking a degree, but desire specialized post-secondary education.

Career opportunities in business and office environments are expanding rapidly for those who have the technical skills to meet the demands. Programs offered through the Business Division provide education that meets the needs of Indiana business employers.

Accounting

The Accounting Program develops an understanding of accounting principles, business law, communications, business equipment and related areas of study in the field. Instruction is offered in computerized accounting systems. Technical skills in financial accounting, cost accounting and tax preparation are emphasized.

Accounting duties typically include maintaining journals and ledgers, processing banking transactions, billing, preparing payroll, maintaining inventory records, purchasing, processing expense reports, preparing payroll, maintaining inventory records, preparing financial statements and analyzing managerial reports. Position titles may include junior or staff accountant, junior auditor, cost accounting clerk, bookkeeper, payroll clerk, inventory clerk, accounts receivable clerk and financial management trainee.

A two-year program requiring 60 credits leads to an associate in applied science degree. Technical certificates and career development certificates also are available. An associate in science degree is available at selected campuses. The Accounting Program is offered in Gary, Valparaiso, Hammond, South Bend, Warsaw, Elkhart, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Anderson, Marion, Terre Haute, Indianapolis, Richmond, Columbus, Bloomington, Madison, Lawrenceburg, Evansville and Sellersburg. The availability of degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Accounting

General Education Core		18 Credits
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
**MAT 110	Contemporary College Mathematics or	3
**MAT 111	Intermediate Algebra	
*Elective	Life/Physical Sciences	3
*Elective	Humanities/Social Sciences	3
*Elective	Economics	3
Technical Core		18 Credits
ACC 101	Accounting Principles I	3
ACC 102	Accounting Principles II	3
BUS 101	Introduction to Business	3
BUS 102	Business Law	3
CIS 101	Introduction to Microcomputers	3
CIS 115	Electronic Spreadsheets in Business	3
Specialty Core		12 Credits
ACC 105	Income Tax I	3
ACC 201	Intermediate Accounting I	3
ACC 202	Intermediate Accounting II	3
ACC 203	Cost Accounting I	3
Regionally Determined Courses		12 Credits
Total Credits		60

Technical Certificate (TC)—Accounting

General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communication or	3
ENG 111	English Composition: Strategies for Inquiry	
*Elective	Humanities/Social Sciences	3
Technical Core		3 Credits
CIS 101	Introduction to Microcomputers	3

*An elective is defined as a course chosen by the student from the inventory of courses available on a campus.

**Regionally determined.

Business Division

Specialty Core		6 Credits
ACC 101	Accounting Principles I	3
ACC 102	Accounting Principles II	3
Regionally Determined Courses		15 Credits
	Total Credits	30

Administrative Office Technology

The Administrative Office Technology Program prepares students for an automated office environment. Students develop basic office skills and acquire computer skills, including word processing, spreadsheets, data bases and microcomputer operating systems. Several applications (advanced word processing, desktop publishing and integrated packages) also can be studied in depth.

The Administrative Office Technology Program is designed to accommodate students with different levels of training experiences. Courses are offered which provide initial, advanced and refresher education and assist individuals in achieving professional recognition and career progression. The program prepares graduates as administrative office personnel and provides opportunities for specialized training in such areas as legal, medical and office automation. Students who complete the recommended sequence of courses are eligible to take the Administrative/Information Processing Specialist (AIPS) or the Certified Professional Secretary (CPS) exams administered by the Institute for Certifying Secretaries of the Professional Secretaries International Association (PSI).

A two-year program requiring 60 credits leads to an associate in applied science degree. Technical certificates and career development certificates also are available. An associate in science degree is available at selected campuses. The Administrative Office Technology Program is offered in Gary, Valparaiso, Hammond, South Bend, Warsaw, Elkhart, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Anderson, Marion, Terre Haute, Indianapolis, Richmond, Columbus, Bloomington, Madison, Lawrenceburg, Evansville, Tell City and Sellersburg. The availability of degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Administrative Office Technology

General Education Core		18 Credits
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3

**MAT 110	Contemporary College Mathematics or	3
**MAT 111	Intermediate Algebra	
*Elective	Economics	3
*Elective	Life/Physical Sciences	3
*Elective	Social Sciences	3
Technical Core		18 Credits
ACC 101	Accounting Principles I	3
AOT 103	Information/Word Processing Concepts	3
AOT 119	Document Production	3
AOT 219	Specialized Formatting/Transcription	3
BUS 101	Introduction to Business	3
CIS 101	Introduction to Microcomputers	3
Specialty Core		12 Credits
AOT 116	Business Communications	3
AOT 202	Information/Word Processing Applications	3
AOT 220	Document Management	3
AOT 221	Office Management/Procedures	3
Regionally Determined Courses		12 Credits
		Total Credits 60

Technical Certificate (TC)—Administrative Office Technology

General Education Core		6 Credits
**ENG 111	English Composition: Strategies for Inquiry or	3
**COM 102	Introduction to Interpersonal Communication	
*Elective	Social Sciences	3
Technical Core		3 Credits
AOT 119	Basic Formatting	3
Specialty Core		6 Credits
AOT 103	Information/Word Processing Concepts	3
CIS 101	Introduction to Microcomputers	3
Regionally Determined Courses		15 Credits
		Total Credits 30

*Elective

**Regionally Determined

Business Administration

The Business Administration Program gives students the broad background they need for general administrative positions in a variety of business environments. It also provides an opportunity for specialization. A student in the Business Administration Program may specialize in one of the following areas: logistics management, management, marketing, quality management or supervision.

A two-year program requiring 60 credits leads to an associate in applied science degree. Technical certificates and career development certificates also are available. An associate in science degree is available at selected campuses. The Business Administration Program is offered in Gary, Valparaiso, Warsaw, South Bend, Fort Wayne, Lafayette, Kokomo, Muncie, Anderson, Marion, Terre Haute, Indianapolis, Richmond, Bloomington, Columbus, Madison, Evansville and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Business Administration

General Education Core			18 Credits
COM 101	Fundamentals of Public Speaking		3
ENG 111	English Composition: Strategies for Inquiry		3
**MAT 110	Contemporary College Mathematics or		3
**MAT 111	Intermediate Algebra		3
*Elective	Economics		3
*Elective	Humanities/Social Sciences		3
*Elective	Life/Physical Sciences		3
Technical Core			18 Credits
ACC 101	Accounting Principles I		3
BUS 101	Introduction to Business		3
BUS 102	Business Law		3
BUS 105	Principles of Management		3
CIS 101	Introduction to Microcomputers		3
MKT 101	Principles of Marketing		3
Specialty Core (See below)			12 Credits
Regionally Determined Courses			12 Credits
Total Credits			60

*Elective

**Regionally Determined

AAS—Business Administration

Logistics Management Specialty Core			12 Credits
LOG	101	Introduction to Materials Management	3
LOG	201	Transportation Systems	3
LOG	202	Physical Distribution	3
MKT	202	Logistics/Purchasing Control	3

AAS—Business Administration

Management Specialty Core			12 Credits
BUS	202	Human Resource Management	3
BUS	204	Case Problems in Management	3
BUS	208	Organizational Behavior	3
BUS	210	Managerial Finance	3

AAS—Business Administration

Marketing Specialty Core			12 Credits
MKT	102	Principles of Selling	3
MKT	104	Advertising	3
MKT	202	Logistics/Purchasing Control	3
MKT	220	Principles of Retailing	3

AAS—Business Administration

Quality Management Specialty Core			12 Credits
QSC	101	Quality Control Concepts and Techniques I	3
QSC	102	Statistical Process Control	3
QSC	202	Quality Control Concepts and Techniques II	3
QSC	204	Total Quality Management	3

AAS—Business Administration

Supervision Specialty Core			12 Credits
BUS	202	Human Resource Management	3
QSC	204	Total Quality Management	3
SUP	102	Techniques of Supervision I	3
SUP	224	Operations Management	3

Business Division

**Technical Certificate (TC)—Business Administration
Management Specialty**

General Education Core		6 Credits
**ENG 111	English Composition: Strategies for Inquiry	3
**COM 102	Introduction to Interpersonal Communication	
*Elective	Humanities/Social Sciences	3
Technical Core		3 Credits
BUS 101	Introduction to Business	3
Specialty Core		6 Credits
BUS 105	Principles of Management	3
CIS 101	Introduction to Microcomputers	3
Regionally Determined Courses		15 Credits
Total Credits		30

TC—Business Administration: Marketing Specialty

General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
**PSY 101	Introduction to Psychology	
	or	3
**SOC 111	Introduction to Sociology	
Technical Core		3 Credits
BUS 101	Introduction to Business	3
Specialty Core		6 Credits
CIS 101	Introduction to Microcomputers	3
MKT 101	Principles of Marketing	3
Regionally Determined Courses		15 Credits
Total Credits		30

TC—Business Administration: Quality Management Specialty

General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	

*Elective

**Regionally Determined

*Elective	Humanities/Social Sciences	3
Technical Core		3 Credits
BUS 101	Introduction to Business	3
Specialty Core		6 Credits
CIS 101	Introduction to Microcomputers	3
QSC 101	Quality Control Concepts and Techniques I	3
Regionally Determined Courses		15 Credits
		Total Credits 30

TC—Business Administration: Supervision Specialty	
General Education Core	6 Credits
**COM 102	Introduction to Interpersonal Communication
	or
**ENG 111	English Composition: Strategies for Inquiry
*Elective	Humanities/Social Sciences
Technical Core	3 Credits
BUS 101	Introduction to Business
Specialty Core	6 Credits
CIS 101	Introduction to Microcomputers
SUP 102	Techniques of Supervision I
Regionally Determined Courses	15 Credits
	Total Credits 30

Computer Information Systems

The Computer Information Systems curriculum, with specialties in computer programming and microcomputer operations, is designed to provide the flexible and comprehensive training required by employers. The curriculum includes technical courses in computer information systems and related areas, general education and regionally determined technical courses in each specialty area. Instruction includes both theoretical concepts and practical applications needed to produce graduates able to function in positions of responsibility.

Automated systems allow for the integration of several functionally related applications such as word processing, database management, spreadsheets, programming, electronic mail systems, graphics generation and telecommunications. These systems may be stand-alone, shared logic,

*Elective

**Regionally Determined

Business Division

distributed or integrated. Demand for employees with computer and business skills is particularly high in small- and medium-sized firms which create, transmit and control information by using computer technology as a management tool.

A two-year program requiring 60 credits leads to an associate in applied science degree. Technical certificates and career development certificates also are available. An associate in science degree is available at selected campuses. The Computer Information Systems Program is offered in Gary, Valparaiso, Hammond, South Bend, Warsaw, Elkhart, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Anderson, Terre Haute, Indianapolis, Richmond, Columbus, Bloomington, Madison, Evansville and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Computer Information Systems

General Education Core		18 Credits
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
**MAT 110	Contemporary College Mathematics or	3
**MAT 111	Intermediate Algebra	3
*Elective	Economics	3
*Elective	Humanities/Social Sciences	3
*Elective	Life/Physical Sciences	3
Technical Core		18 Credits
ACC 101	Accounting Principles I	3
BUS 101	Introduction to Business	3
CIS 101	Introduction to Microcomputers	3
CIS 102	Data Processing Fundamentals	3
CIS 113	Logic, Design and Programming	3
CIS 203	Systems Analysis and Design	3
Specialty Core (See next page)		12 Credits
Regionally Determined Courses		12 Credits
Total Credits		60

*Elective

**Regionally Determined

AAS—Computer Information Systems

Programming Specialty Core			12 Credits
CIS	104	Introduction to COBOL Programming	3
CIS	106	Microcomputer Operating Systems	3
CIS	201	Database Design and Management	3
CIS	202	Data Communications	3

AAS—Computer Information Systems

Microcomputer Specialty Core			12 Credits
CIS	106	Microcomputer Operating Systems	3
CIS	115	Electronic Spreadsheets in Business	3
CIS	202	Data Communications	3
CIS	224	Hardware and Software Troubleshooting	3

**Technical Certificate (TC)—Computer Information Systems
Programming Specialty**

General Education Core			6 Credits
**COM	102	Introduction to Interpersonal Communication or	3
**ENG	111	English Composition: Strategies for Inquiry	
**MAT	110	Contemporary College Mathematics or	3
**MAT	111	Intermediate Algebra or	
*Elective		Life/Physical Sciences or	
*Elective		Humanities/Social Sciences	
Technical Core			3 Credits
CIS	101	Introduction to Microcomputers	3
Specialty Core			6 Credits
CIS	104	Introduction to COBOL Programming	3
CIS	113	Logic, Design and Programming	3
Regionally Determined Courses			15 credits
			Total Credits 30

*Elective

**Regionally Determined

Business Division

TC—Computer Information Systems: Microcomputer Specialty		
General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
**MAT 110	Contemporary College Mathematics	
	or	
**MAT 111	Intermediate Algebra	
	or	
*Elective	Life/Physical Sciences	
	or	3
*Elective	Humanities/Social Sciences	
Technical Core		3 Credits
CIS 101	Introduction to Microcomputers	3
Specialty Core		6 Credits
CIS 106	Microcomputer Operating Systems	3
CIS 115	Electronic Spreadsheets in Business	3
Regionally Determined Courses		15 Credits
	Total Credits	30

Hospitality Administration

The Hospitality Administration Program emphasizes the techniques of such hospitality leaders as Ritz, Escoffier, Statler, Hilton and Marriott. By choosing a specialty area, students begin building leadership skills for the profession of welcoming and serving guests. The hospitality programs offered by Ivy Tech produce graduates who can perform well in the hospitality industry.

Specialties are available in baking and pastry arts, catering, culinary arts, food service (technical certificate only) and hotel and restaurant administration. A two-year program requiring 60-66 credits leads to an associate in applied science degree. Technical certificates and career development certificates are also available. The Hospitality Administration Program is offered in Gary, Fort Wayne, Indianapolis and Richmond. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

*Elective

**Regionally Determined

Associate in Applied Science (AAS)—Hospitality Administration

General Education Core			18 Credits
COM 101	Fundamentals of Public Speaking		3
ENG 111	English Composition: Strategies for Inquiry		3
**MAT 110	Contemporary College Mathematics or		3
**MAT 111	Intermediate Algebra		
*Elective	Economics		3
*Elective	Humanities/Social Sciences		3
*Elective	Life/Physical Sciences		3
Technical Core			18 Credits
HOS 101	Sanitation and First Aid		3
HOS 102	Basic Foods Theory and Skills		3
HOS 104	Nutrition		3
HOS 109	Hospitality Purchasing		2
HOS 201	Hospitality Organization and Human Resource Management		3
HOS 203	Menu, Design and Layout		2
HOS 204	Food and Beverage Cost Control		2
Specialty Core (See below)			12—30 Credits
Regionally Determined Courses			0—12 Credits
Total Credits			60-66

AAS—Hospitality Administration

Baking and Pastry Arts Specialty Core			29 Credits
BKR 101	Yeast Raised Breads and Rolls		3
BKR 102	Plasticized and Sweet Doughs		3
BKR 103	Internship		3
BKR 201	Cakes, Icings and Fillings		3
BKR 202	Classical Cake Decoration		3
BKR 204	Externship		3
HOS 103	Soups, Stocks and Sauces		2
HOS 105	Introduction to Baking		3
HOS 106	Pantry and Breakfast		3
HOS 207	Classical Pastries and Chocolates		3

*Elective

**Regionally Determined

AAS—Hospitality Administration

Catering Administration Specialty Core		12 Credits	
CTR	114	On/Off Institutional Catering	3
CTR	214	Catering Administration	3
HOS	108	Table Service	3
HOS	216	Hospitality Marketing and Group Sales	3

AAS—Hospitality Administration

Culinary Arts Specialty Core		24 Credits	
CUL	110	Meat Cutting	2
CUL	206	Externship/Internship	3
CUL	211	Classical Cuisines	3
CUL	212	Fish and Seafood	2
HOS	103	Soups, Stocks and Sauces	2
HOS	105	Introduction to Baking	3
HOS	106	Pantry and Breakfast	3
HOS	108	Table Service	3
HOS	202	Garde Manger	3

AAS—Hospitality Administration

Hotel and Restaurant Administration Specialty Core		30 Credits	
ACC	101	Accounting Principles I	3
HOS	107	Hospitality Computer Systems	3
HOS	108	Table Service	3
HOS	114	Hospitality Organization and Administration	3
HOS	205	Food and Beverage Cost Control Application	1
HOS	214	Hospitality Law and Security	3
HOS	216	Hospitality Marketing and Group Sales	3
HRM	201	Food and Beverage Management	2
HRM	202	Front Office	3
HRM	203	Practicum	3
HRM	206	Housekeeping	3

**Technical Certificate (TC)—Hospitality Administration
Food Service Specialty**

General Education Core		6 Credits
**ENG 111	English Composition: Strategies for Inquiry	
	or	3
**COM 102	Introduction to Interpersonal Communication	
SOC 111	Introduction to Sociology	3
Technical Core		3 Credits
HOS 101	Sanitation and First Aid	3
Specialty Core		6 Credits
FST 102	Food Service Equipment Operations	3
HOS 102	Basic Foods Theory and Skills	3
Regionally Determined Courses		15 Credits
Total Credits		30

Paralegal

Recognizing the demand for trained paralegals, Ivy Tech has shaped a curriculum with input from attorneys and other professionals associated with the legal field. These advisors offer Ivy Tech the opportunity to establish the qualifications necessary for success in the paralegal field.

Ivy Tech's program provides knowledgeable paralegal professionals ready for an exciting career. The duties of trained paralegals can range from research and writing to interviewing and investigations. As examples, paralegals can be found performing legal research, drafting legal correspondence and legal pleadings, interviewing clients and witnesses, or managing trial documents and exhibits.

Ivy Tech training provides students with the wide variety of skills necessary to succeed in this career. The curriculum emphasizes written and oral communication skills and provides in-class opportunities for technical skill development. Courses are taught by attorneys who are selected based upon their experience in the subject matter, as well as their familiarity with the function of paralegals as part of the legal team.

A two-year program requiring 60 credits leads to an associate in applied science degree. The Paralegal Program is offered in Indianapolis.

*Elective

**Regionally Determined

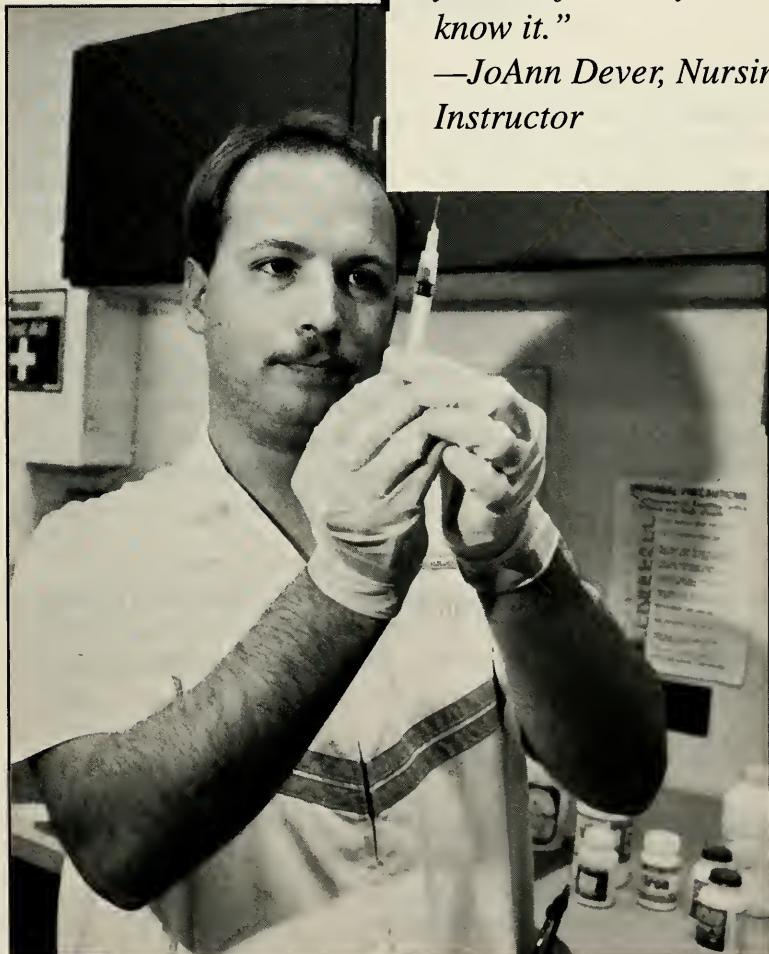
Associate in Applied Science (AAS)—Paralegal

General Education Core			18 Credits
ANP 101	Anatomy and Physiology		3
COM 101	Fundamentals of Public Speaking		3
ENG 111	English Composition: Strategies for Inquiry		3
ENG 112	Exposition and Persuasion		3
**MAT 110	Contemporary College Mathematics or Intermediate Algebra		3
*Elective	Humanities/Social Science		3
Technical Core			18 Credits
ACC 101	Accounting Principles I		3
BUS 101	Introduction to Business		3
CIS 101	Introduction to Microcomputers		3
LEG 101	Introduction to Paralegal Studies		3
LEG 102	Legal Research and Writing		3
LEG 103	Civil Procedures		3
Specialty Core			12 Credits
LEG 106	Claims Investigation		3
LEG 202	Litigation		3
LEG 203	Law Office Management and Technology		3
LEG 204	Advanced Legal Writing		3
Regionally Determined Courses			12 Credits
Total Credits			60

*Elective

**Regionally Determined

Health and Human Services



"The best thing about teaching at Ivy Tech is that this is where real learning happens. learning is like electricity in the air. When it happens, you can feel it—you know it."

—JoAnn Dever, Nursing Instructor

Health and Human Services Division

The Division of Health and Human Services prepares students to become technically trained members of the health care team. Classroom, laboratory and clinical experience prepare students for service in hospitals, laboratories, nursing homes, child-care facilities, physicians' offices and other health care related settings.

College health occupation programs are recognized and accredited by appropriate external accrediting agencies. Students should contact the local Ivy Tech campus for information concerning programs and course offerings.

Child Development

The Child Development Program focuses on early childhood growth and development including adult-child relationships. Emphasis is placed on the development of skills and techniques for providing appropriate environments and care for young children. Instruction is provided in the physical, emotional, social and cognitive areas of early childhood. The training is appropriate for candidates seeking the Child Development Associate (CDA) credential. The student develops competencies through classroom instruction, observation and participation in early childhood settings.

Employment opportunities include day care, nursery school, head start, family day care, pediatrics setting, nanny care, school aide, school age care, employer sponsored day care, infant/toddler care, resource and referral services, intergenerational care, respite/sick care, and other settings as they develop.

The two-year associate in applied science degree program requires 63 credits. A technical certificate also is available. The availability of degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses. Programs and courses are offered in Fort Wayne, Muncie, Richmond and Indianapolis.

Associate in Applied Science (AAS)—Child Development

General Education Core		18 Credits
ENG 111	English Composition: Strategies for Inquiry	3
ENG 112	Exposition and Persuasion	3

**MAT 110	Contemporary College Math or	3
**MAT 111	Intermediate Algebra	3
PSY 101	Introduction to Psychology	3
**BIO 101	Introductory Biology or	3
**SCI 111	Physical Science	3
SOC 111	Introduction to Sociology	3
Technical Core		18 Credits
CHD 121	Introduction to Early Childhood Profession	3
CHD 122	Child Growth and Development	3
CHD 123	Health, Safety and Nutrition	3
CHD 124	Developmental and Cultural Awareness	3
CHD 207	Families in Transition	3
CHD 221	Emerging Literacy	3
Specialty Core		12 Credits
CHD 125	Curriculum in the Creative Arts	3
CHD 129	Practicum I	2
CHD 130	Practicum II	2
CHD 131	Seminar in Guidance Techniques	2
CHD 225	Cognitive Curriculum	3
Regional Core		15 Credits
CHD 206	Early Child Administration	3
CHD 230	Practicum III	4
CHD 231	Seminar II - Issues in Early Childhood Education	2
CHD	Regionally Determined	3
CHD	Regionally Determined	3
	Total Credits	63

Technical Certificate (TC)—Child Development

General Education Core		6 Credits
ENG 111	English Composition: Strategies for Inquiry	3
**SOC 111	Introduction to Sociology or	3
**PSY 101	Introduction to Psychology	3

**Regionally Determined

Technical Core		24 Credits
CHD 121	Introduction to the Early Childhood Profession	3
CHD 122	Child Growth and Development	3
CHD 123	Health, Safety and Nutrition	3
CHD 124	Cultural and Developmental Awareness	3
CHD 125	Curriculum in the Creative Arts	3
CHD 129	Practicum I	2
CHD 130	Practicum II	2
CHD 131	Seminar in Guidance Techniques	2
CHD 221	Emerging Literacy in Young Children	3
Total Credits		30

Dental Assistant

Students in the Dental Assistant Program receive instruction in preparing patients for treatment and in chairside assisting as the dentist examines and treats patients. The dental assistant will expose and process X-ray films, sterilize instruments, provide oral health instruction, assist with record keeping and other office management practices. Students gain necessary knowledge and skills in general education, basic science, dental anatomy and materials, chairside assisting, laboratory techniques, radiology and basic office procedure. In addition to academic and clinical course work on campus, students are provided with practical experience in dental offices under the supervision of college and dental office personnel.

A one-year program requiring 42 credits leads to a technical certificate. Graduates are eligible to take the certification exam administered by the Dental Assisting National Board, Inc. The program is available at Lafayette.

Technical Certificate (TC)—Dental Assistant

General Education Core		6 Credits
ENG 111	English Composition: Strategies for Inquiry	3
COM 102	Introduction to Interpersonal Communication	3
Technical Core		36 Credits
DEN 102	Dental Materials & Laboratory I	3
DEN 103	Dental Anatomy	3
DEN 108	Preventive Dentistry/Diet & Nutrition	3

DEN	115	Pre-clinical Practice	4
DEN	116	Dental Emergencies/Pharmacology	2
DEN	117	Dental Office Management	2
DEN	118	Dental Radiography	4
DEN	119	Dental Materials & Laboratory II	2
DEN	120	Pre-clinical/Clinical Practicum	4
DEN	121	Clinical Practicum	7
DEN	131	Basic Integrated Science	2
		Total Credits	42

Human Services

The Human Services Program offers students the opportunity to become human services generalists and/or to concentrate in the areas of substance abuse, gerontology, criminal justice, or child development.

Human services professionals reach out to individuals, families and communities. The Human Services Program provides students with the broad understanding they need to help others meet their psychological, social and environmental needs. The human services generalist may find employment in a variety of settings such as community centers, group homes, substance abuse centers and nursing homes. All enrolled in the program take a core of human services courses.

Those who study human services with a focus on substance abuse may find positions in substance abuse centers (residential, detoxification and hospitals) as counselors or residents-in-training. Those who focus on gerontology may find jobs in adult day care centers, senior citizens centers and extended care facilities.

Program objectives include training the entry-level worker, providing education and training to upgrade the skills and knowledge of those currently employed, and providing development and enhancement. Throughout the program, students examine their values and attitudes which reflect upon their interactions with others.

The associate of applied science degree requires 62 credits. The availability of degrees and specialties will vary from campus to campus. Interested students should contact local Ivy Tech campuses. The program is offered in Fort Wayne, Muncie and Indianapolis.

Health & Human Services Division

Associate in Applied Science (AAS)—Human Services

General Education Core			18 Credits
COM 101	Fundamentals of Public Speaking	3	
ENG 111	English Composition: Strategies for Inquiry	3	
MAT 110	Contemporary College Mathematics	3	
POL 101	Introduction to American Government and Politics	3	
**SCI 111	Physical Science or	3	
**BIO 111	Introductory Biology		
**SOC 111	Introduction to Sociology or	3	
**PSY 101	Introduction to Psychology		
Technical Core			18 Credits
HMS 101	Introduction to Human Services	3	
HMS 102	Helping Relationships Techniques	3	
HMS 103	Interviewing and Assessment	3	
HMS 205	Behavior/Reality Techniques	3	
HMS 206	Group Process and Skills	3	
HMS 207	Program Planning/Policy Issues	3	
Specialty Core (See Below)			12-13 Credits
Regionally Determined Courses			13-14 Credits
Total Credits			62

AAS—Human Services

Criminal Justice Specialty Core			12 Credits
HMS 105	Criminal Justice Systems	3	
HMS 107	Juvenile Delinquency	3	
HMS 230	Abnormal Psychology	3	
HMS 240	Rehab Process: Probation and Parole	3	

AAS—Human Services

Generalist Specialty Core			12 Credits
CIS 101	Introduction to Microcomputers	3	
*Elective	Human Services	3	
*Elective	Human Services	3	
PSY 201	Lifespan Development	3	

*Elective

**Regionally Determined

AAS—Human Services

Gerontology Specialty Core			12 Credits
HMS	108	Psychology of Aging	3
HMS	120	Health and Aging	3
HMS	130	Social Aspects of Aging	3
**HMS	111	Long-Term Care Activity Directory or **HMS 114 Social Services in Long-Term Care or **HMS 140 Loss and Grief or **CIS 101 Introduction to Microcomputers	3 3 3 3

AAS—Human Services

Mental Health Specialty Core			13 Credits
HMS	104	Crisis Intervention	3
HMS	220	Legal Aspects	3
HMS	230	Abnormal Psychology	4
PSY	201	Lifespan Development	3

AAS—Human Services

Substance Abuse Specialty Core			12 Credits
HMS	113	Problems of Substance Abuse in Society	3
HMS	208	Treatment Models of Substance Abuse	3
HMS	209	Counseling Issues	3
HMS	210	Codependency	3

**Technical Certificate (TC)—Human Services:
Mental Health Specialty**

General Education Core			6 Credits
COM	102	Introduction to Interpersonal Communication	3
PSY	101	Introduction to Psychology	3
Technical Core			3 Credits
HMS	101	Introduction to Human Services	3
Specialty Core			6 Credits
HMS	205	Behavioral/Reality Techniques	3
HMS	230	Abnormal Psychology	3
Regionally Determined Courses			15 Credits
Total Credits			30

**Regionally Determined

Medical Assistant

The graduate of the Medical Assistant Program is a professional, multi-skilled person dedicated to assisting in patient care management, primarily in a physician's office. The practitioner performs administrative and clinical duties and may manage emergency situations, facilities and/or personnel. Competence in the field also requires that a medical assistant display professionalism, communicate effectively and provide instruction to patients. A required externship under the direct supervision of a physician provides valuable on-the-job experience.

Graduates of the AAS and TC (Generalist Specialty) in the Medical Assistant Program will be prepared to take the Certification Examination of the American Association of Medical Assistants (AAMA) and the American Medical Association (AMA).

The two-year associate in applied science program requires 63 credits for completion. Technical and career development certificates also are available. The availability of degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses. Programs are offered in Columbus, Evansville, Fort Wayne, Anderson, Richmond, Indianapolis, Kokomo, Lafayette, Madison, Muncie, Sellersburg, South Bend, Terre Haute and Valparaiso.

Associate in Applied Science (AAS)—Medical Assistant

General Education Core		18 Credits
ANP 101	Anatomy and Physiology I	3
ANP 102	Anatomy and Physiology II	3
COM 102	Introduction to Interpersonal Communication	3
ENG 111	English Composition: Strategies for Inquiry	3
*Elective	Mathematics	3
*Elective	Humanities	3

*Elective

Technical Core		18 Credits
HHS	101	Medical Terminology 3
HHS	102	Medical Law and Ethics 2
MEA	102	First Aid and CPR 2
MEA	113	Pharmacology 3
MEA	131	Medical Financial Management 3
MEA	132	Computer Concepts in the Medical Office 2
MEA	203	Disease Conditions 3
Specialty Core		21 Credits
MEA	114	Medical Assistant (MA) Lab Techniques 3
MEA	115	Medical Insurance 2
MEA	120	MA Clinical Extern 3
MEA	121	MA Administrative Extern 3
MEA	130	Medical Office Administration 2
MEA	133	Clinical Theory 3
MEA	134	Clinical Skills Lab 2
MEA	135	Medical Word Processing/ Transcription 3
Regionally Determined Courses		6 Credits
*Elective		Administrative 3
*Elective		Clinical 3
Total Credits		63

Technical Certificate (TC)—Medical Assistant: Generalist Specialty		
General Education Core		6 Credits
ANP	101	Anatomy and Physiology I 3
COM	102	Introduction to Interpersonal Communication 3
Technical Core		3 Credits
HHS	101	Medical Terminology 3
Specialty Core		39 Credits
ANP	102	Anatomy and Physiology II 3
ENG	111	English Composition: Strategies for Inquiry 3
HHS	102	Medical Law and Ethics 2
MEA	102	First Aid and CPR 2
MEA	113	Pharmacology 3
MEA	114	MA Lab Techniques 3
MEA	115	Medical Insurance 2
MEA	120	MA Clinical Extern 3

*Elective

Health & Human Services Division

MEA 121	MA Administrative Extern	3
MEA 130	Medical Office Administration	2
MEA 131	Medical Financial Management	3
MEA 132	Computer Concepts in the Medical Office	2
MEA 133	Clinical Theory	3
MEA 134	Clinical Skills Lab	2
MEA 135	Medical Word Processing/Transcription	3
	Total Credits	48

TC—Medical Assistant: Clinical Specialty

General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communications	3
*Elective	Science/Math/Humanities	3
Technical Core		3 Credits
HHS 101	Medical Terminology	3
Specialty Core		6 Credits
ANP 101	Anatomy and Physiology I	3
ANP 102	Anatomy and Physiology II	3
Regionally Determined Courses		15 Credits
	Total Credits	30

TC—Medical Assistant: Administrative Specialty

General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communication	3
*Elective	Science/Math/Humanities	3
Technical Core		3 Credits
HHS 101	Medical Terminology	3
Specialty Core		6 Credits
HHS 102	Medical Law and Ethics	2
MEA 130	Medical Office Administration	2
MEA 132	Computer Concepts in the Medical Office	2
Regionally Determined Courses		15 Credits
	Total Credits	30

*Elective

TC—Medical Assistant: Pharmacy Technician Specialty		
General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communications	3
MAT 110	Contemporary College Mathematics	3
Technical Core		3 Credits
HHS 101	Medical Terminology	3
Specialty Core		21 Credits
ANP 101	Anatomy and Physiology I	3
ANP 102	Anatomy and Physiology II	3
HHS 102	Medical Law and Ethics	2
MEA 113	Pharmacology	3
MEA 151	Pharmacy Technician I	3
MEA 152	Pharmacy Technician II	3
MEA 153	Pharmacy Technician Administration	2
MEA 154	Pharmacy Externship	2
Total Credits		30

Medical Laboratory Technician

The Medical Laboratory Technician Program is designed to prepare graduates to work in clinics, physicians' offices, hospitals and research laboratories as medical laboratory technicians. Medical laboratory technicians perform laboratory procedures, define and solve associated problems, and use quality control techniques to aid in the diagnosis, treatment and monitoring of patients. Courses in bacteriology, parasitology, chemistry, hematology, immunology, anatomy, physiology and immunohematology provide both theory and practical applications.

The associate in applied science degree program requires 67 credits. Programs are offered in South Bend and Terre Haute.

Associate in Applied Science (AAS)—Medical Laboratory Technician

General Education Core			18 Credits
*ANP 101	Anatomy and Physiology I		3
*ANP 102	Anatomy and Physiology II		3
*BIO 111	General Microbiology		3

*Must take two of three courses ANP 101, ANP 102 or BIO 111 (regionally determined).

Health & Human Services Division

**COM	101	Fundamentals of Public Speaking or	3
**COM	102	Introduction to Interpersonal Communication	
ENG	111	English Composition: Strategies for Inquiry	3
MAT	111	Intermediate Algebra	3
**PSY	101	Introduction to Psychology or	3
**SOC	111	Introduction to Sociology	
Technical Core			31 Credits
CHM	101	Chemistry I	3
MLT	101	Fundamentals of Lab Techniques	3
MLT	102	Routine Analysis Techniques	3
MLT	201	Immunology Techniques	3
MLT	202	Immunohematology Techniques	3
MLT	204	Microbiology Techniques	3
MLT	205	Hematology Techniques I	3
MLT	206	Hematology Techniques II	3
MLT	207	Chemistry Techniques I	3
MTL	208	Chemistry Techniques II	2
HHS	102	Medical Law and Ethics	2
Specialty Core			18 Credits
MLT	209	Routine Analysis Applications	1
MLT	210	Hematology Applications	3
MLT	211	Microbiology Applications	3
MLT	212	Immunology Applications	1
MLT	213	Immunohematology Applications	3
MLT	214	Chemistry Applications	3
MLT	215	Parasitology and Mycology	1
MLT	218	Pathology	3
Total Credits			67

**Regionally Determined

Nursing*

The Associate in Science in Nursing (ASN) Program is designed to accommodate students who are entering nursing for the first time, as well as licensed practical nurses seeking educational mobility to the associate degree level. Graduates of the ASN program are eligible to take the NCLEX-RN examination to become registered nurses. Those interested in the ASN program are encouraged to contact the nearest campus offering a program for information concerning course and program offerings.

Students complete technical courses at Ivy Tech and may take general education courses either at Ivy Tech or at an accredited four-year institution. Upon completion of the program, graduates may seek immediate employment as nurses or choose to transfer their credits to a four-year institution offering a baccalaureate degree. The associate degree program is offered at Gary, South Bend, Lafayette, Indianapolis, Richmond, Madison, Evansville, Bloomington and Sellersburg.

Associate in Science—Nursing Completion Option, LPNs only.

Available only at Gary, Richmond and Madison. All students are LPNs and have completed all general education requirements prior to program entry.

Technical Core		38 Credits
NUR	105	NLN Mobility Profile 1, Book 1 5
NUR	199	Comprehensive Competency Skill Review 3
NUR	205	Issues in Nursing 2
NUR	211	Life Cycle Nursing I 5
NUR	212	Life Cycle Nursing II 5
NUR	213	Life Cycle Nursing I Practicum 5
NUR	221	Life Cycle Nursing III 4
NUR	222	Life Cycle Nursing IV 4
NUR	223	Life Cycle Nursing II Practicum 5

*The Associate in Science in Nursing (ASN) program is being revised. A new curriculum will become effective in the Fall '95 term. Interested students should contact their local campus program advisor for further information.

General Education Core	27 Credits
Minimum Core Requirements: ANP 101, ANP 102 Anatomy and Physiology I & II (6 credits), BIO 111 General Microbiology (3 credits), ENG 111 English Composition: Strategies for Inquiry (3 credits), PSY 101 Introduction to Psychology (3 credits), PSY 201 Lifespan Development (3 credits). Total 18 credits.	

Additional Credits: An additional 9 credit hours shall be earned from the following courses: CHM 101 Chemistry I (3 credits) or MAT 111 Intermediate Algebra (3 credits), COM 102 Introduction to Interpersonal Communication (3 credits) or COM 101 Fundamentals of Public Speaking (3 credits), Sociology 111 Introduction to Sociology (3 credits) or CIS 101 Introduction to Microcomputers (3 credits).

Total Credits 65

Associate in Science—Nursing: Generic Option

Curriculum for students with no prior nursing credentials. Available at South Bend, Lafayette, Indianapolis, Evansville, Bloomington and Sellersburg.

Technical Core	38 Credits
NUR 101 Fundamental Nursing Concepts	4
NUR 102 Fundamental Nursing Concepts Practicum	4
NUR 103 Life Cycle Nursing I	4
NUR 104 Life Cycle Nursing I Practicum	4
NUR 201 Life Cycle Nursing II	5
NUR 202 Life Cycle Nursing II Practicum	5
NUR 203 Life Cycle Nursing III	5
NUR 204 Life Cycle Nursing III Practicum	5
NUR 205 Issues in Nursing	2

General Education Core	27 Credits
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Minimum Core Requirements: ANP 101, ANP 102 Anatomy and Physiology I & II (6 credits), BIO 111 General Microbiology (3 credits), ENG 111 English Composition: Strategies for Inquiry (3 credits), PSY 101 Introduction to Psychology (3 credits), PSY 201 Lifespan Development (3 credits). Total 18 credits.

Additional Credits: An additional 9 credits hours shall be earned from the following courses: CHM 101 Chemistry I (3 credits) or MAT 111 Intermediate Algebra (3 credits), COM 102 Introduction to Interpersonal

Communication (3 credits) or COM 101 Fundamentals of Public Speaking (3 credits), SOC 111 Introduction to Sociology (3 credits) or CIS 101 Introduction to Microcomputers (3 credits).

Total Credits 65

Associate in Science Degree—Nursing: Completion Option

Curriculum for LPNs seeking to advance to the associate level in nursing. This curriculum builds on prior nursing education. LPNs will enter the program at the appropriate point in the curriculum listed above. This program is available at South Bend, Lafayette, Indianapolis, Evansville, Bloomington and Sellersburg.

Technical Core		38 Credits
NUR	105	National League of Nursing Mobility Profile, Book 1 5
NUR	106	Transition to Associate Degree Nursing 5
NUR	107	Transition to Associate Degree Nursing Practicum 3
NUR	199	Comprehensive Competency Skill Review 3
NUR	201	Life Cycle Nursing II 5
NUR	202	Life Cycle Nursing II Practicum 5
NUR	203	Life Cycle Nursing III 5
NUR	204	Life Cycle Nursing III Practicum 5
NUR	205	Issues in Nursing 2

General Education Core

27 Credits

Minimum Core Requirements: ANP 101, ANP 102 Anatomy and Physiology I & II (6 credits), BIO 111 General Microbiology (3 credits), ENG 111 English Composition: Strategies for Inquiry (3 credits), PSY 101 Introduction to Psychology (3 credits), PSY 201 Lifespan Development (3 credits). Total 18 credits.

Additional Credits: An additional 9 credit hours shall be earned from the following courses: CHM 101 Chemistry I (3 credits) or MAT 111 Intermediate Algebra (3 credits), COM 102 Introduction to Interpersonal Communication (3 credits) or COM 101 Fundamentals of Public Speaking (3 credits), SOC 111 Introduction to Sociology (3 credits) or CIS 101 Introduction to Microcomputers (3 credits).

Total Credits 65

Practical Nursing*

The licensed practical nurse (LPN) is an integral part of the health care team. The Practical Nursing Program is a one-year course of study leading to a technical certificate. This accredited program prepares the individual to take the state licensure exam to become a licensed practical nurse. The program is designed for students to gain knowledge and technical skills necessary to appropriately care for patients in a variety of health care settings such as hospitals, convalescent centers and physicians' offices. Students learn to administer medications and treatments commonly performed by licensed practical nurses.

The program is offered in Gary, Valparaiso, South Bend, Elkhart, Fort Wayne, Lafayette, Kokomo, Muncie, Terre Haute, Greencastle, Indianapolis, Richmond, Columbus, Bloomington, Madison, Evansville and Sellersburg.

Technical Certificate—Practical Nursing

Technical Core			50 Credits
PNU	101	Foundations of Nursing	4
PNU	102	Therapeutic Measures	3
PNU	103	Holistic Approach to Health	2
PNU	104	Nutrition	2
PNU	105	Introduction to Clinical Nursing	3
PNU	106	Anatomy and Physiology for PN	5
PNU	107	Cardiopulmonary Nursing	3
PNU	108	Endocrine/Genitourinary Nursing	3
PNU	109	Gastrointestinal/Sensorimotor Nursing	3
PNU	110	Introduction to Pharmacology for PN	2
PNU	111	Pharmacology for Practical Nurses	2
PNU	112	Medical/Surgical Clinical Nursing I	3
PNU	113	Medical/Surgical Clinical Nursing II	2
PNU	114	Nursing Issues and Trends	1
PNU	115	Gerontology	3
PNU	116	Geriatric Clinical Nursing	3
PNU	117	Maternal/Child Nursing	3
PNU	118	Maternal/Child Clinical Nursing	3
		Total Credits	50

*The licensed practical nursing (LPN) program is being revised. A new curriculum will become effective in the Fall '95 term. Interested students should contact their local campus program advisor for further information.

Occupational Therapy Assistant

Occupational therapy directs an individual's participation in selected tasks to restore, reinforce and enhance performance, facilitate learning of those skills and functions essential for adaptation and productivity, diminish or correct pathology, and promote and maintain health. An occupational therapy assistant provides service to individuals whose abilities to cope with living tasks have been threatened or impaired by developmental deficits, the aging process, physical injury or illness, or psychological disability. The profession serves a diverse population in a variety of settings such as hospitals and clinics, rehabilitation facilities, long-term care facilities, extended care facilities, sheltered workshops, schools and camps, private homes and community agencies.

The first class of occupational therapy assistants begins in the fall of 1994. Program accreditation by the American Occupational Therapy Association, Inc. and the American Medical Association Committee on Allied Health Education and Accreditation will be sought for the first and all following classes. The associate in science degree program is offered in Indianapolis.

Associate in Science (AS)—Occupational Therapy Assistant

General Education Core			25 Credits
ANP 101	Anatomy and Physiology I		3
ANP 102	Anatomy and Physiology II		3
ANP 201	Advanced Human Physiology		4
COM 101	Fundamentals of Public Speaking		3
ENG 111	English Composition: Strategies for Inquiry		3
MAT 111	Intermediate Algebra		3
PSY 101	Introduction to Psychology		3
PSY 201	Lifespan Development		3
Technical Core			26 Credits
OTA 101	Basics of Occupational Therapy		3
OTA 102	Occupational Therapy Art and Craft Techniques		3
OTA 104	Applied Kinesiology		3
OTA 202	Disabling Psychiatric Conditions in Occupational Therapy		2
OTA 203	Independent Living Skills		3
OTA 205	Medical Care I		3
OTA 208	Occupational Therapy Assistant Theory I		2
OTA 209	Occupational Therapy Assistant Theory II		3

Health & Human Services Division

Specialty Core			15 Credits
OTA	211	Clinical Management	2
OTA	212	Medical Care II	3
OTA	103	Community Practicum	1
OTA	105	Therapeutic Group Activities	3
OTA	201	Clinical Observation	1
OTA	204	Occupational Therapy Techniques I	1
OTA	206	Therapeutic Activities	1
OTA	207	Fieldwork Level I	1
OTA	210	Therapeutic Adaptations	3
OTA	213	Fieldwork Level 2-A & Experience in Occupational Therapy I	2
OTA	214	Fieldwork Level 2-B & Experience in Occupational Therapy II	2
		Total Credits	66

Paramedic Science

The Paramedic Science Program prepares competent health care providers who possess the professional qualities required to function in the uncontrolled environment of emergency medicine in the pre-hospital setting. The program qualifies graduates for state certification as emergency medical technician-paramedics. Students will gain the knowledge and skills to manage the hostile environment of accidents and traumatic occurrences in the pre-hospital setting, including disentanglement, controlling armed encounters, accomplishing rescue techniques and demonstrating patient care procedures. The curriculum includes clinical and practical instruction, as well as a field internship in advanced emergency care and services. The degree requires 65 credit hours for completion and is offered in Evansville.

Associate in Applied Science (AAS)—Paramedic Science

General Education Core			18 Credits
ANP	101	Anatomy & Physiology I	3
ANP	102	Anatomy and Physiology II	3
COM	101	Fundamentals of Public Speaking	3
ENG	111	English Composition: Strategies for Inquiry	3
ETH	101	Introduction to Ethics	3
MAT	111	Intermediate Algebra	3

Technical Core		46 Credits
PAR	102	Emergency Medical Technician— Basic Training 7.5
PAR	106	Prehospital Environment 1.5
PAR	111	Preparatory 5.5
PAR	202	Trauma 4
PAR	206	Medical 16.5
PAR	211	Ob/Gyn Neonatal 3.5
PAR	216	Behavioral Emergencies 7.5
Total Credits		64

Radiologic Technology

The radiologic technologist prepares and positions patients for X-rays, determines the proper voltage, current, and exposure time, and operates the equipment. Trained radiologic technologists work in hospitals, medical laboratories, physicians' and dentists' offices and clinics, federal and state health agencies, and certain educational institutions.

The associate in applied science program includes courses in the following areas: radiologic technique, exposure, positioning, protection, radiation physics, and ethics. Clinical practice and supplemental instruction are provided in accredited hospitals. Upon completion of program requirements, graduates are eligible to take the National Registry Examination. The program is offered in Indianapolis and Terre Haute.

Associate in Applied Science (AAS)—Radiologic Technology

General Education Core		18 Credits
ANP	101	Anatomy and Physiology I 3
ANP	102	Anatomy and Physiology II 3
COM	101	Fundamentals of Public Speaking 3
ENG	111	English Composition: Strategies for Inquiry 3
MAT	111	Intermediate Algebra 3
**SOC	111	Introduction to Sociology or 3
**PSY	101	Introduction to Psychology

**Regionally Determined

Technical Core			63 Credits
CIS	101	Introduction to Microcomputers	3
HHS	101	Medical Terminology.	3
HHS	102	Medical Law & Ethics	2
		**Pharmacology	3
RAD	101	Orientation/Nursing X-ray Technology	4
RAD	102	Principles of Radiographic Exposures I	2
RAD	103	Radiographical Positioning I	3
RAD	104	X-ray Clinical Education I	4
RAD	105	Radiographical Positioning II	3
RAD	106	X-ray Clinical Education II	4
RAD	107	Radiation Physics	3
RAD	109	Imaging Techniques	2
RAD	201	Radiographical Positioning III	2
RAD	202	X-ray Clinical Education III	4
RAD	203	X-ray Clinical Education IV	4
RAD	204	X-ray Clinical Education V	4
RAD	205	Pathology for Radiographic Technologists	2
RAD	206	Radiobiology	3
RAD	298	General Examination Review	3
RAD	XXX	Radiographical Positioning IV	3
RAD	XXX	Principles of Radiographic Exposures II	2
Regionally Determined Course			3 Credits
Total Credits			84

Respiratory Care

A respiratory care practitioner is an allied health professional who works under the direction of physicians in the diagnosis, evaluation, treatment, education and care of patients with cardiopulmonary diseases or abnormalities.

A graduate of the associate in applied science program will be eligible to sit for the entry level and advanced practitioner exams given by the National Board for Respiratory Care (NBRC). Successful examination candidates will be awarded the Registered Respiratory Therapist credential. A graduate of the technical certificate program will be eligible to sit for the entry-level practitioner exam given by the NBRC. Successful exam candidates will be awarded the Certified Respiratory Therapy Technician credential.

The two-year associate in applied science degree requires 79 credits for completion. Technical certificates also are offered. The availability of degrees

**Regionally Determined

will vary from campus to campus. Interested students should contact local Ivy Tech campuses. Programs are offered in Fort Wayne, Indianapolis, Lafayette and Valparaiso.

Associate in Applied Science (AAS)—Respiratory Care

General Education Core		24 Credits	
ANP	101	Anatomy & Physiology I	3
ANP	102	Anatomy & Physiology II	3
BIO	111	General Microbiology	3
CHM	101	Chemistry I	3
ENG	111	English Composition: Strategies for Inquiry	3
ENG	211	Technical Writing	3
MAT	111	Intermediate Algebra	3
PSY	101	Introduction to Psychology	3
Technical Core—55 Credits			
HHS	104	Information Systems for Health Care (Computer)	1
		**Pharmacology	3
RES	101	Respiratory Care Science I	3
RES	102	Respiratory Care Science II	3
RES	103	Respiratory Care Science III	3
RES	104	Critical Care I	3
RES	105	Cardiopulmonary Physiology	3
RES	106	Clinical Medicine I	3
RES	108	Clinical Practicum 1	3
RES	109	Clinical Practicum 2	3
RES	110	Clinical Practicum 3	3
RES	111	Clinical Practicum 4	3
RES	112	Clinical Practicum 5	3
RES	205	Clinical Practicum 6	3
RES	206	Clinical Practicum 7	3
RES	210	Cardiopulmonary Diagnostics	3
RES	211	Critical Care II	3
RES	212	Continuing Care	2
RES	214	Advance Cardiac Life Support	1
RES	215	Clinical Medicine II	3
		Total Credits	79

**Regionally Determined

Technical Certificate (TC)—Respiratory Care

General Education Core			18 Credits
ANP	101	Anatomy & Physiology I	3
ANP	102	Anatomy & Physiology II	3
BIO	111	General Microbiology	3
CHM	101	Chemistry I	3
ENG	111	English Composition: Strategies for Inquiry	3
MAT	111	Intermediate Algebra	3
Technical Core			33 Credits
RES	101	Respiratory Care Science I	3
RES	102	Respiratory Care Science II	3
RES	103	Respiratory Care Science III	3
RES	104	Critical Care I	3
RES	105	Cardiopulmonary Physiology	3
RES	106	Clinical Medicine I	3
RES	108	Clinical Practicum I	3
RES	109	Clinical Practicum 2	3
RES	110	Clinical Practicum 3	3
RES	111	Clinical Practicum 4	3
RES	112	Clinical Practicum 5	3
Total Credits			51

Surgical Technology

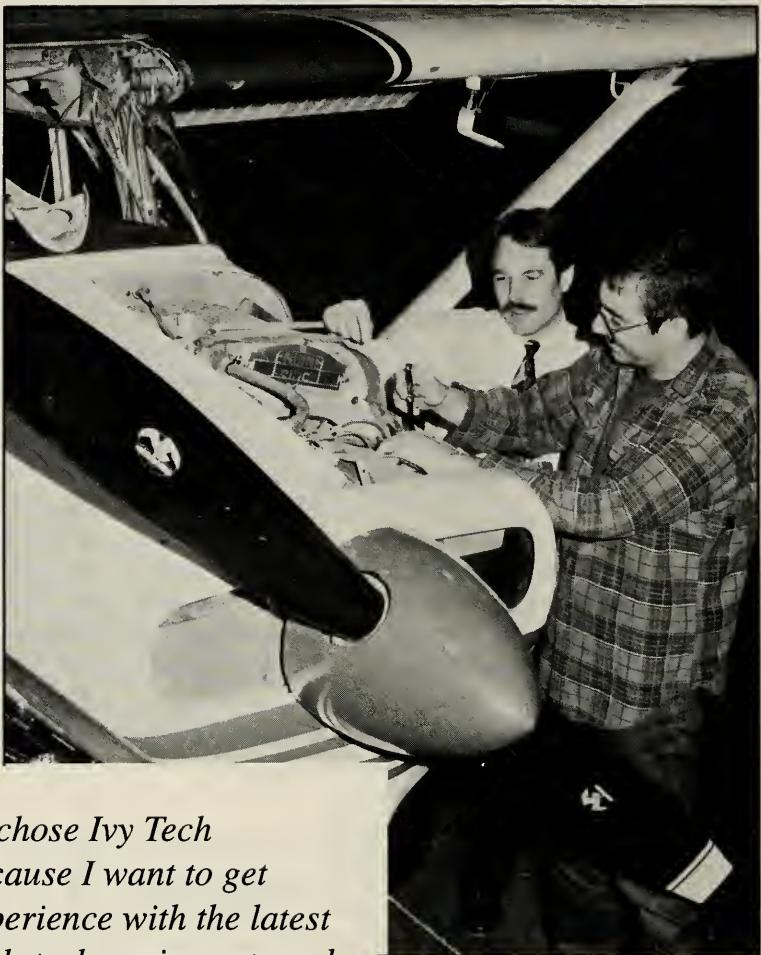
The surgical technologist is a member of the surgical team, qualified by didactic and clinical education to provide safe and efficient care to the patient in the operating room. Instruction consists of courses in anatomy and physiology, microbiology, pharmacology, medical law and ethics, surgical techniques and surgical procedures.

Closely supervised clinical education is provided in local area hospitals. The surgical technologist actively participates in surgery by performing scrub and/or circulating duties which include passing instruments and supplies to surgical team members, preparing and positioning the patient, operating equipment, assisting the anesthesiologist and keeping accurate records. Obstetrical and emergency room clinical experiences may be provided by specific hospitals. The two-year associate in applied science program requires 67 credits. The program is offered in Valparaiso, Lafayette, Indianapolis and Evansville.

Associate in Applied Science (AAS)—Surgical Technology

General Education Core			21 Credits
ANP	101	Anatomy & Physiology I	3
ANP	102	Anatomy & Physiology II	3
BIO	111	General Microbiology	3
COM	102	Introduction to Interpersonal Communication	3
ENG	111	English Composition: Strategies for Inquiry	3
**MAT	110	Contemporary College Mathematics or	3
**MAT	111	Intermediate Algebra	
**PSY	101	Introduction to Psychology or	3
**SOC	111	Introduction to Sociology	
Specialty Core			8 Credits
HHS	101	Medical Terminology	3
HHS	102	Medical Law and Ethics	2
**Pharmacology			3
Technical Core			38 Credits
SUR	101	Surgical Techniques	3
SUR	102	Surgical Procedures I	3
SUR	103	Fundamentals of Surgical Technology	6
SUR	104	Surgical Procedures II	6
SUR	105	Clinical Applications I	9
SUR	106	Surgical Procedures III	3
SUR	107	Clinical Applications II	8
Total Credits			67

**Regionally Determined



*"I chose Ivy Tech
because I want to get
experience with the latest
high-tech equipment used
in industry today."
—Tim Yates, Student*

Technology Division

Technology Division

Aircraft Maintenance Technology

The Aircraft Maintenance Technology Program prepares students to become certified as airframe and powerplant mechanics and introduces them to quality control methods, team building, technical writing and computer skills. Opportunities exist for employment with commercial air carriers and private maintenance operations.

Completion of the two-year program, consisting of 78-79 credit hours, will lead to an associate in applied science degree with a specialty in aircraft maintenance technology or powerplant. The program is offered in Terre Haute.

Associate in Applied Science (AAS)—Aircraft Maintenance Technology

General Education Core		19 Credits
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
ENG 211	Technical Writing	3
MAT 131	Algebra/Trigonometry	3
PHY 110	Technical Physics	4
*Elective	Social Sciences	3
Technical Core		39 Credits
AVT 101	Aviation Fundamentals	3
AVT 102	Airframe Materials and Processes	6
AVT 103	Airframe Structures	6
AVT 201	Airframe Systems and Controls I	5
AVT 202	Airframe Systems and Controls II	6
AVT 204	Airframe Certification	1
AVT 220	Airframes	3
QSC 101	Quality Control Concepts and Techniques I	3
TEC 104	Computer Fundamentals for Technology	3
TEC 113	Basic Electricity	3
Specialty Core (See below)		20-21 Credits
Total Credits		78-79

*Elective

Technology Division

AAS—Aircraft Maintenance Technology

Avionics Specialty Core		20 Credits
AVT	104	Introduction to Avionics 3
AVT	205	Navigation and Communications Systems 3
AVT	206	Aviation Control Circuits 3
ELT	103	Digital Principles 3
ELT	202	Microprocessors 4
ELT	228	Communications Electronics 3
ELT	242	FCC License Preparation 1

AAS—Aircraft Maintenance Technology

Powerplant Specialty Core		21 Credits
AVT	105	Powerplant Systems I 3
AVT	207	Powerplant Systems II 3
AVT	208	Powerplant Inspection and Troubleshooting 4
AVT	209	Propellers 3
AVT	210	Powerplant Overhaul 4
AVT	211	Powerplant Certification 1
AVT	221	Powerplants 3

Automotive Technology

The Automotive Technology Program prepares students with the general and technical education needed for successful careers in automotive service, sales, technical support, management and customer relations, and for continuation in higher education. A student in the Automotive Technology Program may specialize in automotive body repair or automotive service.

A two-year program requiring 60-61 credits leads to an associate in applied science degree. Technical and career development certificates also are available. Programs are offered in Gary, Michigan City, South Bend, Fort Wayne, Lafayette, Kokomo, Muncie, Terre Haute, Indianapolis, Richmond, Columbus, Madison, Evansville, Tell City and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact the local Ivy Tech campus.

Associate in Applied Science (AAS)—Automotive Technology

General Education Core		18-19 Credits
COM	(Regionally Determined)	3
ENG 111	English Composition: Strategies for Inquiry	3
MAT 111	Intermediate Algebra	3
	**Life/Physical Science	3-4
	**General Education	3
*Elective	Humanities/Social Sciences	3
Technical Core		18 Credits
AMV 100	Introduction to Transportation	3
AMV 101	Chassis and Suspension Principles	3
AMV 107	Engine Principles and Design	3
AMV 113	Electricity for Transportation	3
AMV 202	Computer Engine Controls	3
TEC 104	Computer Fundamentals for Technology	3
Specialty Core (See below)		12 Credits
Regionally Determined Courses		12 Credits
Total Credits		60-61

AAS—Automotive Technology

Automotive Body Repair Specialty Core		12 Credits
ABR 101	Body Repair Fundamentals	3
ABR 103	Auto Paint Fundamentals	3
ABR 104	Collision Damage Repair	3
ABR 106	Body Repair Applications	3

AAS—Automotive Technology

Automotive Service Specialty Core		12 Credits
AST 105	Fuel Systems	3
AST 201	Heating and Air Conditioning Principles	3
AST 209	Automotive Braking Systems	3
AST 220	Transaxle and Driveline Service	3

*Elective

**Regionally Determined

Technology Division

Technical Certificate (TC)—Automotive Technology Automotive Body Repair Specialty

General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communication	3
*Elective	Social Sciences/Mathematics/Life/Physical Sciences/Humanities	3
Technical Core		3 Credits
AMV 101	Chassis and Suspension Principles	3
Specialty Core		6 Credits
ABR 101	Auto Body Repair Fundamentals	3
ABR 103	Auto Paint Fundamentals	3
Regionally Determined Courses		24 Credits
Total Credits		39

TC—Automotive Technology: Automotive Service Specialty

General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communication	3
*Elective	Social Sciences/Mathematics	3
Technical Core		3 Credits
AMV 101	Chassis and Suspension Principles	3
Specialty Core		6 Credits
AMV 100	Introduction to Transportation	3
TEC 104	Computer Fundamentals for Technology	3
Regionally Determined Courses		24 Credits
Total Credits		39

Avionics Technology

The Avionics Technical Certificate Program prepares graduates to maintain modern aircraft avionic systems. These aircraft systems fall under the categories of power generation, communications and radar, and navigation and flight control. Basic courses emphasize an understanding of electrical, electronic and computer fundamentals. Advanced courses apply these fundamentals to the operation of the aircraft systems. The program is offered in Terre Haute.

*Elective

Technical Certificate (TC)—Avionics Technology

General Education Core			9 Credits
ENG 111	English Composition: Strategies for Inquiry		3
ENG 211	Technical Writing		3
MAT 131	Algebra/Trigonometry I		3
Technical Core			32 Credits
AVT 101	Aviation Fundamentals		3
AVT 104	Introduction to Avionics		3
AVT 205	Navigation and Communications Systems		3
AVT 206	Aviation Control Circuits		3
ELT 103	Digital Principles		3
ELT 202	Microprocessors		4
ELT 228	Communications Electronics		3
ELT 242	FCC License Preparation		1
QSC 101	Quality Control Concepts and Techniques I		3
TEC 104	Computer Fundamentals for Technology		3
TEC 113	Basic Electricity		3
Total Credits			41

Construction Technology

The Construction Technology Program is designed to produce technicians with broad-based skills in construction methods, estimation and specification, and blueprint interpretation. Students may choose a specialty area to build on the foundation skills. Specialized courses are offered in architectural design, plumbing, cabinetry, surveying, and heating, ventilation and air conditioning. The flexibility of the program allows students to pursue a full course of study or take courses as needed to update skills.

Associate in applied science degrees require 61 to 64 credits in construction technology. Specialties are available in architecture, cabinetry, heating, ventilation and air conditioning, residential and light carpentry, and surveying. Technical and career development certificates also are available. Programs are offered in Fort Wayne, Kokomo, Muncie, Richmond and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Technology Division

Associate in Applied Science (AAS)—Construction Technology

General Education Core		19 Credits
**Communications Course		3
ENG 111	English Composition: Strategies for Inquiry	3
MAT 111	Intermediate Algebra	3
MAT 121	Geometry/Trigonometry	3
PHY 110	Technical Physics	4
*Elective	Humanities/Social Sciences	3
Technical Core		18 Credits
CON 101	Introduction to Construction Technology	3
CON 106	Construction Blueprint Reading	3
CON 204	Estimating and Specifications	3
TEC 102	Technical Graphics	3
TEC 104	Computer Fundamentals for Technology	3
TEC 113	Basic Electricity	3
Specialty Core (See below)		12-15 Credits
Regionally Determined Courses		9-12 Credits
Total Credits		61-64

AAS—Construction Technology

Architectural Specialty Core		15 Credits
DCT 105	Facilities Design and Layout	3
DCT 109	Construction Materials and Specifications	3
DCT 204	Architectural CAD	3
DCT 208	Structural Detailing	3
DSN 103	CAD Fundamentals	3

AAS—Construction Technology

Cabinetry Specialty Core		12 Credits
BCT 107	Furniture Design and Construction	3
BCT 108	Cabinetry Fabrication Techniques	3
BCT 111	Woodworking Fundamentals	3
BCT 113	Cabinetry/Furniture Door and Drawer Assembly	3

Elective***Regionally Determined**

AAS—Construction Technology**Heating, Ventilation and**

Air Conditioning Specialty Core			15 Credits
HEA 101	Heating Fundamentals		3
HEA 103	Refrigeration I		3
HEA 104	Heating Service		3
HEA 106	Refrigeration II		3
HEA 202	Electrical Circuits and Controls		3

AAS—Construction Technology

Residential and Light Carpentry Specialty Core			12 Credits
BCT 104	Floor and Wall Layout and Construction		3
BCT 105	Roof Construction		3
BCT 114	Exterior Trim		3
BCT 221	Interior Trim		3

AAS—Construction Technology

Surveying Specialty Core			12 Credits
DCT 210	Surveying I		3
DCT 213	CAD Mapping		3
DSN 103	CAD Fundamentals		3
DSN 106	Descriptive Geometry		3

Technical Certificate (TC)—Construction Technology**Heating, Ventilation and Air Conditioning Specialty****General Education Core** **6 Credits**

**COM 102	Introduction to Interpersonal Communication	
	or	3

**ENG 111	English Composition: Strategies for Inquiry
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*Elective	Mathematics/Social Sciences/ Humanities/Life/Physical Sciences	
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Technical Core **3 Credits**

CON 101	Introduction to Construction Technology
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Specialty Core **6 Credits**

HEA 101	Heating Fundamentals	
HEA 103	Refrigeration I	

Regionally Determined Courses **24 Credits****Total Credits** **39**

*Elective

**Regionally Determined

TC—Construction Technology
Residential and Light Carpentry Specialty

General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication or	3
**ENG 111	English Composition: Strategies for Inquiry	3
*Elective	Mathematics/Social Sciences/ Humanities/Life/Physical Sciences	3
Technical Core		3 Credits
CON 101	Introduction to Construction Technology	3
Specialty Core		6 Credits
BCT 104	Floor and Wall Layout and Construction	3
BCT 105	Roof Construction	3
Regionally Determined Courses		15 Credits
Total Credits		30

Design Technology

The Design Technology Program is competency-based and is designed to be responsive to the needs of business and industry. The program provides an environment conducive to the development of general knowledge, technical skills and critical thinking skills so graduates may enter their profession as entry level technicians. They also will be prepared to respond to future advances and changes in their profession. Graduates will have the necessary skills to choose other related and challenging careers or continue their education at other post-secondary institutions.

Associate in applied science degrees require 64 credits. Specialties include architecture, civil, computer-aided drafting design and manufacturing, heating, ventilation and air conditioning, and mechanical.

Technical and career development certificates also are available. Programs are offered in Gary, Hammond, Valparaiso, Elkhart, South Bend, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Terre Haute, Indianapolis, Bloomington, Columbus, Evansville and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

*Elective

**Regionally Determined

Associate in Applied Science (AAS)—Design Technology

General Education Core		19 Credits
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
**MAT 111	Intermediate Algebra or MAT 131 Algebra/Trigonometry I	3
**MAT 121	Geometry/Trigonometry or MAT 132 Algebra/Trigonometry II	3
PHY 101	Physics I	4
*Elective	Humanities/Social Sciences	3
Technical Core		21 Credits
DSN 103	CAD Fundamentals	3
DSN 106	Descriptive Geometry	3
DSN 220	Advanced CAD	3
DSN 221	Statics	3
DSN 222	Strength of Materials	3
TEC 102	Technical Graphics	3
TEC 104	Computer Fundamentals for Technology	3
Specialty Core (See below)		12 Credits
Regionally Determined Core		12 Credits
Total Credits		64

AAS—Design Technology:

Architecture Specialty Core		12 Credits
DCT 105	Facilities Design and Layout	3
DCT 109	Construction Materials and Specifications	3
DCT 204	Architectural CAD	3
DCT 208	Structural Detailing	3

*Elective

**Regionally Determined

Technology Division

AAS—Design Technology

Civil Specialty Core			12 Credits
DCT	109	Construction Materials and Specifications	3
DCT	208	Structural Detailing	3
DCT	210	Surveying I	3
DCT	213	CAD Mapping	3

AAS—Design Technology**Computer-Aided Drafting Design and Manufacturing**

Specialty Core			12 Credits
MTT	208	CNC Programming I	3
MTT	220	CAD/CAM I	3
MTT	221	CAD/CAM II	3
TEC	101	Manufacturing Processes	3

AAS—Design Technology**Heating, Ventilation and Air Conditioning Design**

Specialty Core			12 Credits
HEA	207	HVAC Codes	3
HEA	214	Applied Design	3
HEA	220	Air Distribution Systems	3
HEA	222	Environmental Control Systems	3

AAS—Design Technology

Mechanical Specialty Core			12 Credits
DCT	104	Product Drafting	3
DCT	202	CAD Programming Language	3
DCT	217	Product Design	3
TEC	101	Manufacturing Processes	3

Technical Certificate (TC)—Design Technology: Architecture Specialty**General Education Core** **6 Credits**

ENG	111	English Composition: Strategies for Inquiry **General Education Course	3 3
Technical Core			3 Credits
TEC	104	Computer Fundamentals for Technology	3

**Regionally Determined

Technology Division

Specialty Core		6 Credits
DSN 103 CAD Fundamentals		3
TEC 102 Technical Graphics		
Regionally Determined Courses		18 Credits
	Total Credits	33

TC—Design Technology: Civil Specialty

General Education Core		6 Credits
ENG 111 English Composition:		
Strategies for Inquiry	3	
**General Education Course	3	
Technical Core		3 Credits
TEC 104 Computer Fundamentals for		
Technology	3	
Specialty Core		6 Credits
DSN 103 CAD Fundamentals		3
TEC 102 Technical Graphics		3
Regionally Determined Courses		18 Credits
	Total Credits	33

TC—Design Technology**Computer-Aided Drafting and Manufacturing Specialty**

General Education Core		6 Credits
ENG 111 English Composition:		
Strategies for Inquiry	3	
**General Education Course	3	
Technical Core		3 Credits
TEC 104 Computer Fundamentals for		
Technology	3	
Specialty Core		6 Credits
DSN 103 CAD Fundamentals		3
TEC 102 Technical Graphics		3
Regionally Determined Courses		18 Credits
	Total Credits	33

TC—Design Technology**Heating, Ventilation and Air Conditioning Design Specialty**

General Education Core		6 Credits
ENG 111 English Composition:		
Strategies for Inquiry	3	
**General Education Course	3	

**Regionally Determined

Technology Division

Technical Core		3 Credits
TEC 104 Computer Fundamentals for Technology		3
Specialty Core		6 Credits
DSN 103 CAD Fundamentals		3
TEC 102 Technical Graphics		3
Regionally Determined Courses		18 Credits
	Total Credits	33

TC—Design Technology: Mechanical Specialty Core		
General Education Core	6 Credits	
ENG 111 English Composition:		
Strategies for Inquiry		3
**General Education Course		3
Technical Core		3 Credits
TEC 104 Computer Fundamentals for Technology		3
Specialty Core		6 Credits
DSN 103 CAD Fundamentals		3
TEC 102 Technical Graphics		3
Regionally Determined Courses		18 Credits
	Total Credits	33

Electronics Technology

The Electronics Technology Program is competency-based and is designed to meet the on-going needs of business, industry and the student. The program is structured to develop the technical skills, general knowledge, and the critical thinking and problem solving abilities of graduates. Broad-based technical skills and critical thinking processes assist the student in adapting to changes in the work environment and allow advancement in the field. Additionally, the program prepares graduates to transfer into baccalaureate degree granting institutions.

Associate in applied science degrees require 66 credits. Specialties include automation controls, automotive, avionic systems, biomedical, communications, computer repair, electronics, industrial, instrumentation, laser electro-optics and microwave. A technical certificate and career development certificates are available. Programs are offered in Gary, Hammond, Michigan City, Valparaiso, Elkhart, South Bend, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Marion, Anderson, Terre Haute, Indianapolis,

**Regionally Determined

Richmond, Bloomington, Columbus, Madison, Evansville and Sellersburg.
The availability of specialties and degrees will vary from campus to campus.
Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Electronics Technology

General Education Core		23 Credits
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
MAT 131	Algebra/Trigonometry I	3
MAT 132	Algebra/Trigonometry II	3
PHY 101	Physics I	4
PHY 102	Physics II	4
*Elective	Humanities/Social Sciences	3
Technical Core		18 Credits
ELT 100	Circuits I	4
ELT 101	Circuits II	4
ELT 103	Digital Principles	3
ELT 105	Solid State I	4
TEC 104	Computer Fundamentals for Technology	3
Specialty Core (See below)		12-13 Credits
Regionally Determined Core		12-13 Credits
	Total Credits	66

AAS—Electronics Technology

Automation Controls Specialty Core		12 Credits
AMT 102	Introduction to Robotics	3
AMT 201	Manufacturing Systems Control	3
AMT 202	Work Cell Design and Integration	3
AMT 205	Automated Manufacturing Systems	3

AAS—Electronics Technology

Automotive Specialty Core		12 Credits
AMV 202	Computer Engine Controls	3
AST 104	Start and Charge Systems	3
AST 105	Fuel Systems	3
AST 106	Electronic Ignition Systems	3

*Elective

Technology Division:

AAS—Electronics Technology

Avionic Systems Specialty Core			12 Credits
AVT	104	Introduction to Avionics	3
AVT	205	Navigation and Communication Systems	3
AVT	206	Aviation Control Circuits	3
ELT	228	Communications Electronics	3

AAS—Electronics Technology

Biomedical Specialty Core			12 Credits
ANP	101	Anatomy and Physiology I	3
HHS	101	Medical Terminology	3
ELT	219	Biomedical Electronics I	3
ELT	220	Biomedical Electronics II	3

AAS—Electronics Technology

Communications Specialty Core			13 Credits
ELT	201	Solid State II	4
ELT	228	Communications Electronics	3
ELT	229	Telecommunications	3
ELT	230	Advanced Communications Electronics	3

AAS—Electronics Technology

Computer Repair Specialty Core			13 Credits
ELT	202	Microprocessors	4
ELT	226	Computer Troubleshooting	3
ELT	227	Peripherals	3
ELT	229	Telecommunications	3

AAS—Electronics Technology

Electronics Specialty Core			12 Credits
ELT	106	Digital Applications	4
ELT	201	Solid State II	4
ELT	202	Microprocessors	4

AAS—Electronics Technology

Industrial Specialty Core			12 Credits
AMT	201	Manufacturing Systems Control	3
ELT	203	Introduction to Industrial Controls	3
ELT	214	Industrial Instrumentation	3
ELT	223	Electrical Machines	3

AAS—Electronics Technology

Instrumentation Specialty Core			12 Credits
ELT	204	Linear Integrated Circuits	3
ELT	214	Industrial Instrumentation	3
ELT	235	Process Control	3
ELT	237	Calibration	3

AAS—Electronics Technology

Laser/Electro-Optics Specialty Core			12 Credits
ELT	110	Fiber Optics	3
ELT	115	Introduction to Lasers	3
ELT	215	Laser Systems	3
ELT	216	Optical Measurements	3

AAS—Electronics Technology

Microwave Systems Specialty Core			13 Credits
ELT	201	Solid State II	4
ELT	227	Peripherals	3
ELT	229	Telecommunications	3
ELT	231	Microwave Communications	3

**Technical Certificate (TC)—Electronics Technology
Electronics Specialty**

General Education Core			6 Credits
ENG	111	English Composition: Strategies for Inquiry	3
MAT	131	Algebra/Trigonometry I	3
Technical Core			3 Credits
TEC	104	Computer Fundamentals for Technology	3
Specialty Core			7 Credits
ELT	100	Circuits I	4
ELT	103	Digital Principles	3
Regionally Determined Courses			14 Credits
Total Credits			30

Industrial Technology

The Industrial Technology Program is a discipline devoted to the development of skills necessary for the installation, operation and maintenance of industrial equipment and systems. The curriculum is broad-based and offers a diversity of specialties, but focuses on the integration of each area as used in

Technology Division:

systemic applications. This requires proficiency in mathematics, communication, physics and basic computer skills, as well as the technical subject matter.

In laboratory applications of classroom study, each student uses the tools and instruments associated with the practice of the industrial technology specialty including volt-ohm meters, leak detectors, sonic diagnostic tools, pressure and level testing devices, preventive maintenance software programs, welding and brazing equipment, metallurgical testing instruments, hand tools, and electronic and hand precision measuring devices. Safety equipment and the safe use of tools and materials are integrated into each course in the curriculum.

Associate in applied science degrees require 61-64 credits in industrial technology. Specialties are available in heating, ventilation and air conditioning, industrial maintenance, machine tool and welding. Technical certificates and career development certificates are available. Programs are offered in Gary, Hammond, Michigan City, Valparaiso, Elkhart, South Bend, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Anderson, Terre Haute, Indianapolis, Richmond, Bloomington, Columbus, Madison, Evansville, Tell City and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Industrial Technology

General Education Core			19 Credits
		**Communications Course	3
ENG	111	English Composition: Strategies for Inquiry	3
MAT	111	Intermediate Algebra	3
MAT	121	Geometry/Trigonometry	3
PHY	110	Technical Physics	4
*Elective		Humanities/Social Sciences	3
Technical Core			18 Credits
IDS	102	Introduction to Print Reading	3
IDS	103	Motors and Motor Controls	3
IDS	114	Introductory Welding	3
QSC	101	Quality Control Concepts and Techniques I	3
TEC	104	Computer Fundamentals for Technology	3
TEC	113	Basic Electricity	3
*Elective		**Regionally Determined	

Technology Division

Specialty Core (See below)	12-15 Credits
Regionally Determined Courses	12 Credits
	Total Credits 61-64

AAS—Industrial Technology**Heating, Ventilation and Air Conditioning**

Specialty Core	15 Credits
HEA 101 Heating Fundamentals	3
HEA 103 Refrigeration I	3
HEA 104 Heating Service	3
HEA 106 Refrigeration II	3
HEA 202 Electrical Circuits and Controls	3

AAS—Industrial Technology

Industrial Maintenance Specialty Core	15 Credits
AMT 201 Manufacturing Systems Control	3
IDS 104 Fluid Power Basics	3
IMT 201 Fluid Power Systems	3
IMT 203 Machine Maintenance/Installation	3
IMT 207 Electrical Circuits	3

AAS—Industrial Technology

Machine Tool Specialty Core	15 Credits
MTT 106 Advanced Print Interpretation	3
MTT 110 Turning and Milling Processes	3
MTT 204 Abrasive Processes I	3
TEC 101 Manufacturing Processes	3
WLD 120 Metallurgy Fundamentals	3

AAS—Industrial Technology

Welding Specialty Core	12 Credits
WLD 100 Welding Processes	3
WLD 120 Metallurgy Fundamentals	3
WLD 205 Welding Codes and Testing	3
WLD 207 Gas Metal Arc (MIG) Welding	3

Technology Division

Technical Certificate (TC)—Industrial Technology Heating, Ventilation and Air Conditioning Specialty		
General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
*Elective	General Education	3
Technical Core		3 Credits
TEC 113	Basic Electricity	3
Specialty Core		6 Credits
HEA 101	Heating Fundamentals	3
HEA 103	Refrigeration I	3
Regionally Determined Courses		24 Credits
		Total Credits 39

TC—Industrial Technology: Industrial Maintenance Specialty		
General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
MAT 111	Intermediate Algebra	3
Technical Core		3 Credits
TEC 113	Basic Electricity	3
Specialty Core		6 Credits
IDS 102	Introduction to Print Reading	3
IDS 104	Fluid Power Basics	3
Regionally Determined Courses		24 Credits
		Total Credits 39

TC—Industrial Technology: Machine Tool Specialty		
General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
MAT 111	Intermediate Algebra	3
*Elective	Regionally Determined	

Technology Division

Technical Core		3 Credits
TEC 113	Basic Electricity	3
Specialty Core		6 Credits
MTT 110	Turning and Milling Processes	3
TEC 101	Manufacturing Processes	3
Regionally Determined Courses		24 Credits
		Total Credits 39

TC—Industrial Technology: Welding Specialty

General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
*Elective	Mathematics/Social Sciences/ Life/Physical Sciences	3
Technical Core		3 Credits
TEC 113	Basic Electricity	3
Specialty Core		6 Credits
WLD 108	Shielded Metal Arc Welding I	3
WLD 207	Gas Metal Arc (MIG) Welding	3
Regionally Determined Courses		24 Credits
		Total Credits 39

Manufacturing Technology

The Manufacturing Technology Program is a multi-disciplinary program designed to prepare students for technician-level positions. Specialty areas allow students to choose an emphasis in plastics, quality assurance, computer-integrated manufacturing, computer-aided design/computer aided manufacturing, computer numerical control or welding. Graduates are prepared to perform many facets of manufacturing including set-up, troubleshooting, processing and quality control.

Skills are acquired through lectures, demonstrations and hands-on experiences. Lab activities include the use of modern equipment and techniques currently found in industry. This provides a foundation for any graduate to enter the workforce and continue skill enhancement.

*Elective

**Regionally Determined

Technology Division

Associate in applied science degrees require 61-64 credits in manufacturing technology. Technical certificates and career development certificates also are available. Programs are offered in Gary, South Bend, Fort Wayne, Lafayette, Kokomo, Logansport, Muncie, Terre Haute, Indianapolis, Richmond, Columbus, Madison, Evansville and Sellersburg. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Manufacturing Technology		
General Education Core		
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
**MAT 111	Intermediate Algebra or	3
MAT 131	Algebra/Trigonometry I	
**MAT 121	Geometry/Trigonometry or	3
MAT 132	Algebra/Trigonometry II	
PHY 101	Physics I	4
*Elective	Humanities/Social Sciences	3
Technical Core		
IDS 104	Fluid Power Basics	3
QSC 101	Quality Control Concepts and Techniques I	3
TEC 101	Manufacturing Processes	3
TEC 102	Technical Graphics	3
TEC 104	Computer Fundamentals for Technology	3
TEC 113	Basic Electricity	3
Specialty Core (See below)		
Regionally Determined Courses		
Total Credits		61-64

AAS—Manufacturing Technology

Computer-Aided Design and Manufacturing (CAD/CAM)

Specialty Core		15 Credits
DSN 103	CAD Fundamentals	3
MTT 106	Advanced Print Interpretation	3
MTT 208	CNC Programming I	3
MTT 220	CAD/CAM I	3
MTT 221	CAD/CAM II	3

*Elective

**Regionally Determined

AAS—Manufacturing Technology**Computer Integrated Manufacturing (CIM)**

Specialty Core			15 Credits
AMT	102	Introduction to Robotics	3
AMT	201	Manufacturing Systems Control	3
AMT	202	Work Cell Design and Integration	3
AMT	203	Automation Electronics	3
AMT	205	Automated Manufacturing Systems	3

AAS—Manufacturing Technology

Computer Numerical Control Specialty Core			15 Credits
MTT	106	Advanced Print Interpretation	3
MTT	208	CNC Programming I	3
MTT	209	CNC Programming II	3
MTT	210	Interactive CNC	3
MTT	211	Advanced Programming Techniques	3

AAS—Manufacturing Technology

Plastics Specialty Core			15 Credits
PMT	101	Introduction to Plastics	3
PMT	106	Introduction to Polymer Science	3
PMT	107	Injection Molding	3
PMT	108	Extrusion Processes	3
PMT	209	Manufacturing of Plastic Products	3

AAS—Manufacturing Technology

Quality Assurance Specialty Core			12 Credits
QSC	102	Statistical Process Control	3
QSC	201	Advanced Statistical Process Control	3
QSC	202	Quality Control Concepts and Techniques II	3
QSC	204	Total Quality Management	3

AAS—Manufacturing Technology

Welding Specialty Core			12 Credits
WLD	100	Welding Processes	3
WLD	120	Metallurgy Fundamentals	3
WLD	205	Welding Codes and Testing	3
WLD	207	Gas Metal Arc (MIG) Welding	3

Technology Division

Technical Certificate (TC)—Manufacturing Technology		
Computer-Aided Design and Manufacturing (CAD/CAM) Specialty		
General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communication	3
MAT 111	Intermediate Algebra	3
Technical Core		3 Credits
TEC 104	Computer Fundamentals for Technology	3
Specialty Core		6 Credits
MTT 110	Turning and Milling Processes	3
TEC 101	Manufacturing Processes	3
Regionally Determined Courses—15 Credits		
	Total Credits	30

TC—Manufacturing Technology		
Computer Numerical Control (CNC) Specialty		
General Education Core		6 Credits
COM 102	Introduction to Interpersonal Communication	3
MAT 111	Intermediate Algebra	3
Technical Core		3 Credits
TEC 104	Computer Fundamentals for Technology	3
Specialty Core		6 Credits
MTT 208	CNC Programming I	3
MTT 209	CNC Programming II	3
Regionally Determined Courses—24 Credits		
	Total Credits	39

TC—Manufacturing Technology: Plastics-Extrusion Molding Specialty		
General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
MAT 111	Intermediate Algebra	3
Technical Core		3 Credits
TEC 104	Computer Fundamentals for Technology	3

**Regionally Determined

Specialty Core		6 Credits
PMT 101	Introduction to Plastics	3
PMT 108	Extrusion Processes	3
Regionally Determined Courses		15 Credits
	Total Credits	30

TC—Manufacturing Technology: Plastics-Injection Molding Specialty		
General Education Core		6 Credits
**COM 102	Introduction to Interpersonal Communication	
	or	3
**ENG 111	English Composition: Strategies for Inquiry	
MAT 111	Intermediate Algebra	3
Technical Core		3 Credits
TEC 104	Computer Fundamentals for Technology	3
Specialty Core		6 Credits
PMT 101	Introduction to Plastics	3
PMT 107	Injection Molding	3
Regionally Determined Courses		15 Credits
	Total Credits	30

Public Safety Technology

The Public Safety Technology Program is designed to meet the ongoing needs of municipalities, students, businesses and industries. The program develops technical skills, general knowledge, critical thinking and problem solving abilities of students. Broad-based technical skills and critical thinking processes assist students in adapting to changes in the work environment and promoting successful advancement on the job. Additionally, the program prepares graduates to transfer to baccalaureate degree-granting institutions if they wish to continue their education.

Specialty areas allow students to choose an emphasis in environmental care, fire science, hazardous materials or public administration. Associate in applied science degrees require 60-63 credits. Technical certificates and career development certificates are available. The Public Safety Technology Program is offered in Gary, Fort Wayne and Indianapolis. The availability of associate in applied science specialties and technical certificates will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Technology Division**Associate in Applied Science (AAS)—Public Safety Technology**

General Education Core			18 Credits
		**Communication Course	3
**CHM	101	Chemistry I or	3
**SCI	111	Physical Science	
ENG	111	English Composition: Strategies for Inquiry	3
MAT	111	Intermediate Algebra	3
POL	101	Introduction to American Government and Politics	3
		**General Education Course	3
Technical Core			18 Credits
PST	120	First Responder	3
PST	121	Industrial Safety and Loss Prevention	3
PST	220	Incident Management Systems	3
PST	221	Design and Planning for Prevention and Protection	3
TEC	104	Computer Fundamentals for Technology	3
TEC	106	Hazardous Materials and Conditions	3
Specialty Core (See below)			12-15 Credits
Regionally Determined Courses			12 Credits
Total Credits			60-63

AAS—Public Safety Technology

Environmental Care Specialty Core			15 Credits
BIO	111	Microbiology	3
HMT	200	Environmental Protection Agency (EPA) Regulations	3
ILT	101	Industrial Lab Techniques	3
QSC	101	Quality Control Concepts and Techniques I	3
TEC	113	Basic Electricity	3

AAS—Public Safety Technology

Fire Science Specialty Core			15 Credits
AFS	102	Fire Apparatus and Equipment	3
AFS	103	Strategy and Tactics	3
AFS	201	Fire Protection Systems	3

**Regionally Determined

AFS	202	Fire Service Management	3
AFS	204	Fire Service Hydraulics	3

AAS—Public Safety Technology

Hazardous Materials Specialty Core			12 Credits
HMT	100	OSHA Regulations	3
HMT	120	Hazard Communication Standard	3
HMT	200	Environmental Protection Agency (EPA) Regulations	3
HMT	220	Hazardous Materials Recovery, Incineration and Disposal	3

AAS—Public Safety Technology

Public Administration Specialty Core			12 Credits
BUS	105	Principles of Management	3
BUS	208	Organizational Behavior	3
SUP	102	Techniques of Supervision I	3
SUP	224	Operations Management	3

**Technical Certificate (TC)—Public Safety Technology
Fire Science Specialty**

General Education Core			6 Credits
ENG	111	English Composition: Strategies for Inquiry	3
POL	101	Introduction to American Government and Politics	3
Technical Core			3 Credits
TEC	104	Computer Fundamentals for Technology	3
Specialty Core			6 Credits
AFS	103	Strategy and Tactics	3
AFS	201	Fire Protection Systems	3
Regionally Determined Courses			15 Credits
Total Credits			30

Quality Science

The Quality Science Program is competency-based and is designed to meet the ongoing needs of business, industry and the student. The program develops technical skills, general knowledge, and critical thinking and problem solving abilities of program graduates. The program is based upon the latest technology available and makes extensive use of the laboratory to complete the theory-to-practice cycle. Broad-based technical skills and critical thinking

Technology Division

processes assist the student in adapting to changes in the work environment and allow advancement in the field. Additionally, the program prepares graduates to transfer into baccalaureate degree-granting institutions for those who wish to continue their education.

Associate in applied science degrees require 64 credit hours in quality science. Specialties may be pursued in industrial laboratory and quality management. Technical certificates also are available. Programs are offered in Lafayette, Terre Haute and Indianapolis. The availability of specialties and degrees will vary from campus to campus. Interested students should contact local Ivy Tech campuses.

Associate in Applied Science (AAS)—Quality Science

General Education Core		22 Credits
CHM 101	Chemistry I	3
COM 101	Fundamentals of Public Speaking	3
ENG 111	English Composition: Strategies for Inquiry	3
MAT 115	Statistics	3
MAT 131	Algebra/Trigonometry I	3
PHY 110	Technical Physics	4
*Elective	Humanities/Social Sciences	3
Technical Core		18 Credits
QSC 101	Quality Control Concepts and Techniques I	3
QSC 102	Statistical Process Control	3
QSC 204	Total Quality Management	3
TEC 101	Manufacturing Processes	3
TEC 104	Computer Fundamentals for Technology	3
TEC 106	Hazardous Materials and Control	3
Specialty Core (See below)		12 Credits
Regionally Determined Courses		12 Credits
Total Credits		64

AAS—Quality Science

Industrial Laboratory Specialty Core		12 Credits
CHM 102	Chemistry II	3
ILT 101	Industrial Laboratory Techniques	3

*Elective

ILT	201	Industrial Instrumentation and Techniques I	3
ILT	202	Industrial Instrumentation and Techniques II	3
AAS—Quality Science			
Quality Management Specialty Core			12 Credits
IDS	102	Introduction to Print Reading	3
QSC	201	Advanced Statistical Process Control	3
QSC	202	Quality Control Concepts and Techniques II	3
QSC	203	Metrology	3
Technical Certificate (TC)—Quality Science			
Industrial Laboratory Specialty			
General Education Core			6 Credits
COM	102	Introduction to Interpersonal Communication	3
MAT	111	Intermediate Algebra	3
Technical Core			3 Credits
QSC	101	Quality Control Concepts and Techniques I	3
Specialty Core			6 Credits
QSC	102	Statistical Process Control	3
QSC	204	Total Quality Management	3
Regionally Determined Courses			15 Credits
Total Credits			30
TC—Quality Science: Quality Management Specialty			
General Education Core			6 Credits
COM	102	Introduction to Interpersonal Communication	3
MAT	111	Intermediate Algebra	3
Technical Core			3 Credits
QSC	101	Quality Control Concepts and Techniques I	3
Specialty Core			6 Credits
QSC	102	Statistical Process Control	3
QSC	204	Total Quality Management	3
Regionally Determined Courses			15 Credits
Total Credits			30

Recreational Vehicle Service Technology

The Recreational Vehicle Service Technology Program prepares students for the field of recreational vehicle repair and service. Graduates are employed as technicians who provide all general maintenance on appliances, chassis and body, install accessories and repair structural damage. Industry contact is developed and maintained through the required internship program. Ivy Tech/ Elkhart is one of nine sites nationwide approved by the Recreational Vehicle Industry Association (RVIA) to offer the program.

An associate in applied science degree and a technical certificate are offered in Elkhart.

Associate in Applied Science (AAS)—Recreational Vehicle Repair Technology

General Education Core			18 Credits
**COM	101	Fundamentals of Public Speaking or Introduction to Interpersonal Communication	3
**COM	102	Introduction to Interpersonal Communication	
ENG	111	English Composition: Strategies for Inquiry	3
ENG	211	Technical Writing	3
MAT	110	Contemporary College Mathematics	3
SCI	111	Physical Science	3
SOC	111	Introduction to Sociology	3
Technical Core			39 Credits
RVT	101	Introduction to RV Services/ Customer Relations	2
RVT	102	Electrical Concepts	3
RVT	103	Fluid Power, Heat and Mechanical Systems	4
RVT	104	LP Gas	2
RVT	105	Electrical Systems Service	5
RVT	106	Braking, Suspension and Towing Systems	3
RVT	107	Air Conditioning and Absorption Refrigeration Service	4
RVT	108	Heating Systems/Accessory Installation and Service	3

**Regionally Determined

RVT 109	Water Systems and Water Heating	2
RVT 110	Interior Coach	3
RVT 111	Exterior Coach	4
RVT 112	Pre-delivery and Preventive Maintenance	2
RVT 201	Metal Processing and Metallurgy	2
Specialty Core		7 Credits
	Internship	7
	Total Credits	64

**Technical Certificate (TC)—Recreational Vehicle Service Technology
Recreational Vehicle Service Specialty**

General Education Core		6 Credits
ENG 111	English Composition: Strategies for Inquiry	3
MAT 110	Contemporary College Mathematics	3
Technical Core		39 Credits
RVT 101	Introduction to RV Services/ Customer Relations	2
RVT 102	Electrical Concepts	3
RVT 103	Fluid Power, Heat and Mechanical Systems	4
RVT 104	LP Gas	2
RVT 105	Electrical Systems Service	5
RVT 106	Braking, Suspension and Towing Systems	3
RVT 107	Air Conditioning and Absorption Refrigeration Service	4
RVT 108	Heating Systems/Accessory Installation and Service	3
RVT 109	Water Systems and Water Heating	2
RVT 110	Interior Coach	3
RVT 111	Exterior Coach	4
RVT 112	Pre-delivery and Preventive Maintenance	2
RVT 201	Metal Processing and Metallurgy	2
	Total Credits	45

Visual Technologies



"Moving from a learning environment into a job where I was suddenly considered the authority on design was a staggering thought at first. But, I found out very soon that the technical knowledge of the MacIntosh computer and design software that I received at Ivy Tech prepared me for this transition."

—Bill Dillon, Ivy Tech Graduate

Visual Technologies

Ivy Tech State College offers associate in applied science degrees in the areas of interior design, video technology and visual communications. Within the visual communications program, specialty areas are offered in graphic design, graphic media production and photography.

Students entering the Visual Technologies Division are exposed to a broad technical core of courses which represent key topics such as organizing the visual field, color theory and applications, image input technology, the computer as a powerful design and image manipulation tool, the professional visual artist as a business person and the exit portfolio.

Ivy Tech's Visual Technologies Division strives for a continuous interaction between students and industries through the jury evaluation system, guest speakers, field trips, advisory committees and field experience opportunities.

The associate in applied science degree requires 66 credits for completion and can be completed in four semester and two summer sessions. An associate in science degree is offered in Evansville, enabling students to attend classes at Ivy Tech and the University of Southern Indiana. If desired, this program can lead to a four-year degree. The availability of programs will vary from campus to campus. Interested students should contact local Ivy Tech campuses. Visual technology programs are offered at South Bend, Evansville, Columbus, Sellersburg, Kokomo and Terre Haute.

Interior Design

The Interior Design Program prepares students for careers by providing the experiences and competencies in research techniques, problem solving and presentation skills necessary to meet today's professional interior design standards.

Structured courses in spatial relationships and organization, environmental issues, human factors, safety and barrier-free guidelines, and project management are incorporated into competent and creative project solutions. These project solutions include residential and contract design case studies using state of the art technologies.

Connecting students to potential employers is accomplished through supervised design projects for community service organizations, related class

Visual Technologies Division

field trips and projects juried by area professionals. Field study opportunities also are provided which allow students to experience first-hand the daily operations and organization of a successful interior design firm. The cumulation of student activity is the completion of an individual exit portfolio and resume which demonstrates the skills and knowledge of the interior design graduate. This portfolio is the primary tool used in job seeking efforts.

The two-year program requiring 66 semester hours culminates with an associate in applied science degree. Programs are offered at South Bend, Kokomo, Evansville and Sellersburg. Entry portfolios will be reviewed for basic drafting, design and drawing skills.

Associate in Applied Science (AAS)—Interior Design

General Education Core			18 Credits
ARH 101	Art History Survey I		3
ARH 102	Art History Survey II		3
COM 101	Fundamentals of Public Speaking		3
ENG 111	English Composition: Strategies for Inquiry		3
**MAT 110	Contemporary College Mathematics or		3
**MAT 111	Intermediate Algebra		
SCI 111	Physical Science		3
Technical Core			18 Credits
VIS 101	Fundamentals of Design		3
INT 102	Building Systems I		3
INT 103	Interior Design I		3
INT 106	Building Systems II		3
INT 108	Interior Design II		3
INT 216	Computer Design Fundamentals		3
Specialty Core			12 Credits
INT 109	History of Interiors I		3
INT 201	Interior Finishes		3
INT 203	Professional Practices		3
INT 219	Special Projects/Portfolio Preparation		3
Regionally Determined Core			18 Credits
Total Credits			66

**Regionally Determined

Video Technology

The Video Technology Program prepares students for a professional career in the visual communications field. The program reflects the visual communications industry needs and standards by providing experiences in research, problem solving and hands-on procedures in video and multi-media program production.

Students learn to create scripts and storyboards, develop a budget and produce a project budget based on client needs. In video production, students learn to use professional cameras, direct the production and supervise production personnel. Students gain experience in studio and remote location techniques. Post production activities include audio dubbing, voice-over narration, digital imaging, editing, computer graphics, animation and special effects. Students learn techniques in audio recording, mixing and electronic audio enhancement using both analog and digital systems. Students also learn techniques in 35mm photography and presentation technology.

The faculty bring to the classroom the knowledge and procedures they gain through their professional activities and industry associations. Students may elect to do an externship at an area studio. All students produce an exit portfolio which demonstrates the quality and scope of their knowledge and skills.

The associate in applied science degree in video technology requires 66 credits for completion. The program is offered at South Bend.

Associate in Applied Science (AAS)—Video Technology

General Education Core			18 Credits
COM	101	Fundamentals of Public Speaking	3
ENG	111	English Composition: Strategies for Inquiry	3
**MAT	110	Contemporary College Mathematics or	3
**MAT	111	Intermediate Algebra	3
SCI	111	Physical Science **Humanities/Art History Survey I **Humanities/Art History Survey II	3

**Regionally Determined

Visual Technologies Division

Technical Core			18 Credits
VID 101	Audio/Video Systems Theory		3
VID 104	Studio I		3
VID 105	Video Production I		3
VIS 101	Fundamentals of Design		3
VIS 102	Fundamentals of Imaging		3
VIS 207	Portfolio Preparation		3
Specialty Core			12 Credits
VID 102	Media Technology		3
VID 106	Production Planning		3
VID 107	Video Production II		3
VID 109	Studio II		3
Regionally Determined Courses			18 Credits
Total Credits			66

Visual Communications

Students entering the Visual Communications Program are exposed to a broad technical core of courses representing key topics such as organizing the visual field, color theory and application, image acquisition and manipulation technology, the computer as a powerful tool, the professional visual artist as a business person and the exit portfolio.

The program offers an associate in applied science degree with specialties in the areas of graphic design, graphic media production and photography. An associate in science degree is offered at the Ivy Tech campus in Evansville. Students pursuing this degree, which may lead to a four-year degree, attend classes at both Ivy Tech and the University of Southern Indiana.

Associate in Applied Science (AAS)—Visual Communications

General Education Core			18 Credits
COM 101	Fundamentals of Public Speaking		3
ENG 111	English Composition: Strategies for Inquiry		3
**MAT 110	Contemporary College Mathematics or **MAT 111 Intermediate Algebra		3
SCI 111	Physical Science		3

****Regionally Determined**

Visual Technologies Division

**Humanities/Social Sciences	3
**Humanities/Social Sciences	3
Technical Core	18 Credits
VIS 101 Fundamentals of Design	3
VIS 102 Fundamentals of Imaging	3
VIS 115 Introduction to Computer Graphics	3
VIS 201 Electronic Imaging	3
VIS 205 Business Practices for Visual Artists	3
VIS 207 Portfolio Preparation	3
Specialty Core (See below)	12-18 Credits
Regionally Determined Courses	12-18 Credits
	Total Credits 66

AAS—Visual Communications

Graphic Design Specialty Core	18 Credits
ART 111 Drawing for Visualization	3
ART 112 Electronic Layout	3
ART 114 Graphic Design	3
ART 115 Typography	3
ART 117 Production	3
ART 217 Advanced Graphic Design	3
Regionally Determined Courses	12 Credits
	Total Credits 66

AAS—Visual Communications

Graphic Media Production Specialty Core	12 Credits
GRA 102 Introduction to Machine Printing	3
GRA 106 Introduction to Color Printing	3
GRA 201 Photomechanical Reproduction	3
GRA 202 Science of Color	3
Regionally Determined Courses	18 Credits
	Total Credits 66

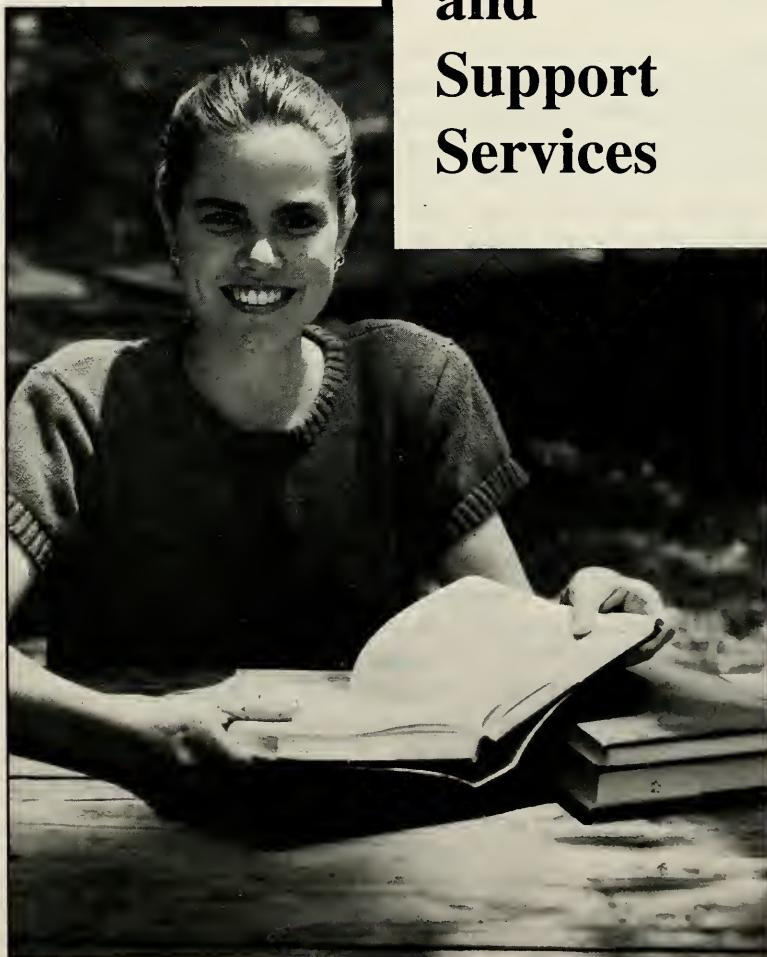
**Regionally Determined

AAS—Visual Communications

Photography Specialty Core		18 Credits
PHO 104	Basic Photography	3
PHO 106	Studio Practices	3
PHO 107	Intermediate Photography	3
PHO 109	Studio Lighting Techniques	3
PHO 201	Principles of Color Photography	3
PHO 204	Commercial Photography Techniques	3
Regionally Determined Courses		12 Credits
Total Credits		66

*"Ivy Tech is a wonderful
place to learn."*

—Retta Hill, Student



General Education and Support Services

General Education and Support Services Division

The primary function of the General Education and Support Services (GESS) Division is to provide general education and basic skills advancement (BSA) courses for the four degree-granting divisions. The division also includes the General Technical Studies Program.

General education is an essential element in the technical degree programs in the other four divisions. Coursework includes communications (written and oral), social sciences (psychology, sociology, economics, political science), humanities (American history, art history, ethics, philosophy), mathematics (from college-level survey math through calculus), and life and physical sciences (physical science survey, physics, anatomy, physiology, chemistry, biology, microbiology).

Basic skills advancement coursework includes English as a second language, language arts (spelling, writing, reading, vocabulary building), mathematics (mathematics and introductory algebra), life and physical sciences (prep/science literacy courses in chemistry and the life sciences), and college orientation (college skills, critical thinking, computer literacy and basic keyboarding). In addition to these courses, campuses may provide regionally determined courses to meet unique local needs. Many BSA programs provide basic skills assessment, one-on-one tutoring, multimedia, technology-based and individualized instruction, special needs counseling and other services in addition to courseware.

The General Technical Studies (GTS) certificate program provides opportunities for students who may not be ready to enter a degree program due to lack of preparation or other reasons. GTS helps these students define and meet their educational objectives. GTS serves students who may be in need of correcting deficient academic skills before enrolling in a technical degree program, have yet to decide upon pursuing a specific course of study, are seeking admission into one of the college's selective programs, wish to examine an occupational program, are in need of a career-oriented educational exploration, are in need of an educational foundation for a related one- or two-year program and wish to pursue a one-year program of general technical studies. The GTS program is available at all 22 campuses. Interested students should contact their local campus.

General Education Courses

Communications

ENG 111 English Composition: Strategies for Inquiry 3 Credits

Provides a foundation in rhetorical principles, communication strategies and inquiry processes that successfully can be applied in personal, academic or professional writing situations. Initiates and integrates the composing process with critical reading and thinking.

ENG 112 Exposition and Persuasion 3 Credits

Builds on the writing skills taught in ENG 111 and emphasizes research-based analytic and persuasive writing. Requires students to complete other collaborative and individual projects.

ENG 211 Technical Writing 3 Credits

Builds on the writing skills taught in ENG 111. Requires students to prepare technical reports for various purposes using standard research techniques, documentation and formatting as appropriate. Requires students to demonstrate both written and oral competencies.

COM 101 Fundamentals of Public Speaking 3 Credits

Introduces fundamental concepts and skills for effective public speaking, including preparation and delivery of informative and persuasive presentations. Includes instruction in the use of visual aids and critical listening.

COM 102 Introduction to Interpersonal Communication 3 Credits

Focuses on the process of interpersonal communication as a dynamic and complex system of interactions. Stresses the importance of understanding and applying interpersonal communication theory in work, family and social relationships. Uses lecture/discussion format.

Social Sciences

ECN 101 Economics Fundamentals 3 Credits

Provides an introduction to the fundamentals of economics and their application to current economic problems.

ECN 201 Principles of Macroeconomics 3 Credits

Develops a conceptual understanding of the forces affecting the level of national income, employment, interest rates and prices.

General Education and Support Services Division

ECN 202 Principles of Microeconomics **3 Credits**

Develops an understanding of the process by which the market price mechanism allocates resources and influences individual behavior.

POL 101 Introduction to American Government and Politics **3 Credits**

Introduces the foundations, nature and dynamics of American government and politics including constitutional foundations, civil liberties and civil rights, federalism, political parties, public opinion, interest groups, media, nominations, campaigns, elections, the presidency, the judiciary, congress, bureaucracies and public policy.

PSY 101 Introduction to Psychology **3 Credits**

Provides a general survey of the science of psychology. Includes the study of research methodology, emotion, biological foundations, learning and cognition, perception, development, personality, abnormal psychology and social psychology.

PSY 201 Lifespan Development **3 Credits**

Covers human development from conception to death. Covers relevant research for each period.

SOC 111 Introduction to Sociology **3 Credits**

Introduces students to the science of human society, including fundamental concepts, descriptions and analysis of society, culture, the socialization process, social institutions and social change.

Humanities

ARH 101 Art History Survey I **3 Credits**

Surveys painting, sculpture and architectural styles of ancient Mediterranean cultures to the Renaissance period. Provides a foundation for the study of art history.

ARH 102 Art History Survey II **3 Credits**

Surveys painting, sculpture and architectural styles from the Renaissance through 20th Century cultures. Emphasizes developing analytical skills.

ETH 101 Introduction to Ethics **3 Credits**

Examines major theories of ethics, theoretical issues, moral problems and issues, and our responsibility to future generations.

HSY 101 Survey of American History I **3 Credits**

Covers major themes and events in American history from the discovery era to the Civil War and Reconstruction.

HSY 102 Survey of American History II**3 Credits**

Covers major themes and events in American history from the Civil War and Reconstruction to the present.

PHL 101 Introduction to Philosophy**3 Credits**

Examines fundamental questions of philosophy such as the foundations of morality, skepticism and knowledge, the nature of mind, free will and determinism, and the existence of God. Emphasizes the evaluation of arguments and analysis of concepts.

Mathematics**MAT 110 Contemporary College Mathematics****3 Credits**

Presents mathematical concepts of numeration, algebra, geometry, probability and statistics through a problem solving and modeling approach. Requires students to recognize, validate and communicate these concepts.

MAT 111 Intermediate Algebra**3 Credits**

Presents an in-depth study of fundamental concepts and operations of algebra including real numbers, roots, linear equations, inequalities, graphing, systems of equations, polynomials, factoring, scientific notation, introduction to logarithms, rational expressions, quadratic equations and conversions of English and metric units.

MAT 115 Statistics**3 Credits**

Provides study in the collection, interpretation and presentation of descriptive and inferential statistics, including measures of central tendency, probability, binomial and normal distributions, hypothesis testing of one- and two-sample populations, confidence intervals, chi-square testing, correlation, data description and graphical representations.

MAT 121 Geometry-Trigonometry**3 Credits**

Provides study in geometry and trigonometry including polygons, similar figures, geometric solids, properties of circles, constructions, right triangles, angle measurements in radians and degrees, trigonometric functions and their application to right triangles, Pythagorean theorem, laws of sine and cosine, graphing of trigonometric functions, trigonometric identities, vectors and coordinate conversions.

MAT 131 Algebra/Trigonometry I**3 Credits**

Provides study in algebra, including functions, exponential rules, linear equations, radicals, vectors, right triangle trigonometry, oblique triangles, graphs of sine and cosine functions and variation.

General Education and Support Services Division

MAT 132 Algebra/Trigonometry II **3 Credits**

Continues MAT 131, providing study in algebra, including systems of equations, vectors, graphing of trigonometric functions, trigonometric equations, complex numbers, exponential and logarithmic functions and conics.

MAT 135 Finite Math **3 Credits**

Surveys solving and graphing linear inequalities, elementary set theory, matrices and their applications, linear programming and elementary probability.

MAT 201 Brief Calculus **3 Credits**

Studies the fundamental concepts and operations of calculus, including the study of functions, limits, continuity, derivatives, points-of-inflection, first-derivative test, concavity, second-derivative test, optimization, antiderivatives, integration by substitution, integration by parts and elementary applications of a definite integral.

Life and Physical Sciences

ANP 101 Anatomy and Physiology I **3 Credits**

Develops a comprehensive understanding of the close inter-relationship between anatomy and physiology as seen in the human organism. Introduces students to the cell which is the basic structural and functional unit of all organisms and covers tissues, integument, skeleton, muscular and nervous systems as an integrated unit.

ANP 102 Anatomy and Physiology II **3 Credits**

Continues the study of the inter-relationships of the systems of the human body.

ANP 201 Advanced Human Physiology **4 Credits**

Provides a study of human physiology for students entering health-oriented fields. Emphasizes the study of the function of the nervous, muscular, circulatory, respiratory, urinary, digestive and endocrine systems, and their homeostatic mechanisms and system interaction. Focuses laboratory exercises on clinically relevant measurement of human function.

BIO 101 Introductory Biology **3 Credits**

Introduces the basic concepts of life. Includes discussion of cellular and organismal biology, genetics, evolution, ecology and interaction among all living organisms. Addresses applications of biology to society.

General Education and Support Services Division**BIO 111 General Microbiology 3 Credits**

Presents an overview of microbiology which includes fundamentals, methods and materials. Introduces industrial and clinical microbiology, and special topics.

CHM 101 Chemistry I 3 Credits

Includes the science of chemistry and measurement, atomic theory and the periodic table, chemical bonding, stoichiometry and gases.

CHM 102 Chemistry II 3 Credits

Includes liquids and solids, solutions and solution concentrations, acids and bases, equilibrium, nuclear chemistry, and organic and biochemistry.

PHY 101 Physics I 4 Credits

Introduces the basic concepts of mechanics, including force and torque, linear and rotational motion, work, energy and power, and simple machines and fluids.

PHY 102 Physics II 4 Credits

Introduces the physics of heat, light, periodic and wave motion, electricity and magnetism, and concepts of modern and current physics.

PHY 110 Technical Physics 4 Credits

Introduces the concepts and applications of physics. Leads students to develop an integrated understanding of the theory and applications of measuring (or unit) systems, scalars, vectors, force, work, rates, energy, momentum, power, force transformers (simple machines), vibrations and waves, and time constants. Emphasizes understanding concepts, factual knowledge, computation and application.

SCI 111 Physical Science 3 Credits

Introduces physical concepts and theories pertaining to current applications and trends in physics, chemistry, earth science and astronomy. Emphasizes concepts and factual knowledge.

Basic Skills Advancement Courses**English as a Second Language (ESL) Courses****BSA 001 Elementary English as a Second Language 3 Credits**

Emphasizes writing elementary statements, reading and understanding elementary materials, and expanding competence in speaking and listening.

General Education and Support Services Division

BSA 002 Intermediate English as a Second Language 3 Credits

Emphasizes writing, reading, and speaking with increasing competence in academic and social situations.

BSA 003 Pre-Academic English as a Second Language 3 Credits

Emphasizes paragraph organization, reading and understanding expository and academic materials through vocabulary development. Develops comprehension of social and academic conversations and lectures.

BSA 004 Academic English as a Second Language 3 Credits

Emphasizes organization of expository writing, finding main ideas and details in academic texts, and understanding and speaking in academic settings.

Language Arts

BSA 007 Spelling 3 Credits

Improves basic spelling competencies through practice and attention to spelling rules and exceptions.

BSA 024 Introduction to College Writing I 3 Credits

Enables beginning college writers to develop control of the writing process through writings which are focused, organized and well developed. Requires students to demonstrate proficiency in basic standard writing conventions, including grammar and mechanics.

BSA 025 Introduction to College Writing II 3 Credits

Builds on the competencies learned in BSA 024 and prepares students for entry into English 111. Enables beginning college writers to expand control of the writing process through writings which are focused, organized and well developed. Requires students to demonstrate increased proficiency in the use of standard writing conventions.

BSA 028 Vocabulary Building 1 Credit

Focuses on developing general English vocabulary. Includes dictionary skills, context skill and work structure analysis.

BSA 031 Reading Strategies for College I 3 Credits

Increases performance in reading comprehension, vocabulary and flexibility. Introduces critical reading skills and study strategies.

BSA 032 Reading Strategies for College II 3 Credits

Enhances performance in reading flexibility, vocabulary and comprehension beyond the level of BSA 031. Emphasizes critical reading and strategies for effective study.

Mathematics

BSA 044 Mathematics **3 Credits**

Reviews fractions and decimals. Concentrates on ratio, proportion, percents, measurement, signed numbers, equations and their applications.

BSA 050 Introductory Algebra **3 Credits**

Reviews signed numbers and simple equation solving. Concentrates on integer exponents, scientific notation, linear and literal equations, polynomial operations, polynomial factoring and graphing skills in preparation for intermediate algebra.

BSA 282 Math for Health Professionals **1 Credit**

Reviews fractions and decimals and covers conversions between the metric and apothecary systems as well as dosage calculations.

Life and Physical Sciences

BSA 061 Introductory Chemistry **3 Credits**

Provides students with an introduction to chemistry basics. Provides instruction for students with little or no recent chemistry background, especially those desiring to continue in more advanced chemistry courses or other science courses.

BSA 065 Introduction to Life Sciences **3 Credits**

Introduces the scientific method and basic concepts and terminology used in biology, microbiology, anatomy, physiology and organic chemistry which is related to life sciences. Prepares entering students who took no high school science or who took science several years ago for general education life sciences courses.

College Orientation

BSA 070 College Success Skills **3 Credits**

Increases success in college by assisting students in obtaining skills necessary to reach their educational objectives. Includes time management, memory techniques, textbook reading, note taking, test taking and resource utilization.

BSA 071 Critical Thinking **3 Credits**

Assists students in developing critical thinking strategies with academic and workplace applications.

BSA 074 Computer Literacy **3 Credits**

Provides a general survey of computer basics. Includes the survey and analysis of microcomputer components, compares and contrasts computer applications, investigates software options, exposes students to hardware peripherals and introduces students to DOS operations.

BSA 081 Keyboarding I **1 Credit**

Provides students with the fundamentals of keyboarding using the touch method. Emphasizes the mastery of the keyboard and the development of proper keyboarding techniques.

BSA 082 Keyboarding II **2 Credits**

Provides students with the fundamentals of keyboarding using the touch method. Emphasizes mastery of the keyboard, development of proper keyboarding techniques and development of skills needed to produce simple documents.

BSA 083 Keyboarding III **3 Credits**

Provides students with the fundamentals of keyboarding using the touch method. Emphasizes mastery of the keyboard, development of speed and accuracy, and development of formatting skills.

Course Descriptions

ABR 101 Body Repair Fundamentals 3 Credits

Examines the characteristics of body metals and includes the installation of moldings, ornaments and fasteners with emphasis on sheet metal analysis and safety.

ABR 103 Auto Paint Fundamentals 3 Credits

Introduces auto paint considerations with emphasis on the handling of materials and equipment in modern automotive technologies.

ABR 104 Collision Damage Analysis and Repair 3 Credits

Provides instruction in analyzing extensive body damage and determining the tools and procedures needed to replace panels.

ABR 105 Conventional Frame Diagnosis and Correction 3 Credits

Covers the use of tools, frame machines and equipment for frame and chassis repair. Includes study of terms pertaining to front suspension and rear axle. Describes uses of frame gauges, tram gauges and other measuring devices.

ABR 106 Body Repair Applications 3 Credits

Introduces fundamentals of using hand and power tools in the repair of minor collision damage, with emphasis on safety.

ABR 107 Automotive Painting Technology 3 Credits

Provides instruction in the total refinishing of an automobile with emphasis on advanced and specialty painting techniques.

ABR 108 Unibody Structural Analysis and Repair 3 Credits

Covers unibody repair, identification and analysis of damage, measuring and fixturing systems, straightening systems and techniques, mechanical component service and knowledge of suspension and steering systems on front-wheel-drive unibody vehicles.

ABR 109 Collision Damage Appraising 3 Credits

Covers uses of estimation guides, procedures for itemizing damage, abbreviations, numbers of parts and uses of time and money conversion tables.

Emphasizes damage inspection, recording on estimate sheets and the calculation of costs.

ABR 110 Auto Body Power Tools 3 Credits

Covers diagnosis of problems associated with the use of power tools in auto body work.

Course Descriptions

ABR 111 Auto Body Hydraulic Tools **3 Credits**

Provides instruction in the selection, use and maintenance of hydraulic tools for auto body repair.

ABR 112 Basic Body Lab I **1 Credit**

Provides students with the opportunity to develop skills and knowledge in the areas of basic auto body fundamentals.

ABR 113 Basic Body Lab II **1 Credit**

Provides students with the opportunity to develop skills and knowledge in the areas of basic auto body application.

ABR 114 Collision Damage Lab **1 Credit**

Provides opportunities to develop skills and knowledge in the area of collision damage analysis and repair.

ABR 115 Auto Body Circuits **3 Credits**

Includes fundamentals of electrical theory, automotive components and circuits, and troubleshooting techniques. Emphasizes battery construction, function and operation.

ABR 116 Suspension/Alignment-AB **3 Credits**

Covers suspension and steering parts of an automobile and the theory of wheel alignment and wheel balance. Provides instruction in identifying wheel alignment angles, steering wheel positioning, vehicle tracking and wheel balancing.

ABR 117 Auto Paint Lab **1 Credit**

Develops auto painting skills with emphasis on materials and equipment handling.

ABR 118 Automotive Upholstery **2 Credits**

Covers techniques of automobile interior refinishing. Includes study of spring construction, filling and fabrics. Develops manipulation skills through practice projects on seats, panels and arm rests.

ABR 119 Glass Installation **3 Credits**

Examines different types of automobile glass and their uses. Includes removal and installation of front and rear glass. Covers installing and adjusting side glass, bonding, rear-view mirror support and use of rubber channel and synthetic rubber adhesive.

ABR 120 Fiberglass Plastic Repair	3 Credits
Introduces types of fiberglass and plastic materials used in auto body repair. Covers both interior and exterior applications.	
ABR 121 Unibody Repair Lab	1 Credit
Develops skills and knowledge in the area of unibody structural analysis and repairs.	
ABR 122 Conventional Frame and Unibody Structural Analysis, Diagnosis and Repair	3 Credits
Includes the use of tools, frame machines and equipment for frame and chassis repair. Includes study of terms pertaining to front suspension and rear axle. Describes the uses of frame gauges, tram identification and other measuring devices. Unibody repair emphasizes identification and analysis of damage, measuring and fixturing systems, straightening systems and techniques, mechanical component service and knowledge of suspension and steering systems on front wheel drive unibody vehicles.	
ACC 101 Accounting Principles 1	3 Credits
Introduces the fundamental principles, techniques and tools of accounting. Presents the mechanics of the accounting cycle including collecting, recording, summarizing, analyzing and reporting information pertaining to service and mercantile enterprises. Covers internal control, deferred charges, notes and interest, valuation of receivables, payrolls, inventories and plant assets.	
ACC 102 Accounting Principles 2	3 Credits
Continues the study of accounting to include partnership and corporate accounting systems. Covers preparation and analysis of financial statements and long-term liabilities and investments. Introduces cost, managerial, branch and nonprofit accounting techniques.	
ACC 105 Income Tax 1	3 Credits
Offers an overview of federal and state income tax law for individuals including taxable income, capital gains and losses, adjustments, standard and itemized deductions, tax credits and appropriate tax forms. Introduces tax concepts needed by a sole proprietorship.	
ACC 106 Payroll Accounting	3 Credits
Covers payroll calculating and reporting including various federal and state withholding taxes, employer payroll taxes, typical insurance and other arrangements affecting the preparation of payroll registers and employees' earnings records. Includes computerized payroll.	

Course Descriptions

ACC 107 Accounting for Recordkeeping 3 Credits

Provides instruction for non-accounting majors, with special emphasis on the trade professions. Covers the cash basis of recordkeeping for materials, payroll, depreciation and financial statements. Introduces the operation of petty cash funds, basic cash budgeting and controlling cash through the use of a checkbook. Covers financial ratios, construction accounting methods and computing customer estimates.

ACC 108 Career Essentials of Accounting 3 Credits

Introduces the basic principles of accounting as utilized in a variety of office settings. Includes the principles of debit and credit, double-entry bookkeeping, use of journals and transaction analysis. Covers uses of ledgers, posting procedures, petty cash, banking procedures, payroll, depreciation, work sheets, balance sheets and income statements.

ACC 109 Personal Finance 3 Credits

Examines the process of setting and achieving financial goals. Emphasizes managing financial resources, budgeting for current expenses, projecting cash flow and managing short- and long-term credit. Includes use of insurance to reduce risks and vehicles for saving and investing.

ACC 111 Accounting Principles Lab 1 1 Credit

Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in an Accounting Principles 1 course. Introduces the touch-method of numeric input on a calculator and includes computerized problems.

ACC 112 Accounting Principles Lab 2 1 Credit

Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in the Accounting Principles 2 course. Uses computerized problems.

ACC 113 Income Tax Lab 1 Credit

Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in the Income Tax 1 course. Uses computerized problems.

ACC 114 Payroll Accounting Lab 1 Credit

Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in the Payroll Accounting course. Uses computerized problems.

ACC 118 Financial Concepts for Accounting 3 Credits

Develops math skills needed in the business field and serves as a basis for course work in business. Includes the study of business applications using rational numbers, algebraic equations, time value of money concepts and basic statistics.

ACC 201 Intermediate Accounting 1 3 Credits

Studies accounting principles and applications at an intermediate level pertaining to the income statement and balance sheet, cash and short-term investments, receivables, inventories, plant assets and intangible assets.

Includes analysis of bad debts, inventory valuation, repairs and maintenance, depreciation of plant assets and present value applications.

ACC 202 Intermediate Accounting 2 3 Credits

Continues studies of Intermediate Accounting 1 and includes long-term investments, current and contingent liabilities, long-term debt, stockholders' equity, special accounting problems and analysis, statement of cash flows and financial statement analysis. Includes capital and treasury stock transactions, dividends, earnings per share, accounting for income taxes, correction of errors and creation of financial statements from incomplete records.

ACC 203 Cost Accounting 1 3 Credits

Examines the manufacturing process in relation to the accumulation of specific costs of manufactured products. Studies various cost accounting report forms, material, labor control and allocation of manufacturing costs to jobs and departments.

ACC 204 Cost Accounting 2 3 Credits

Continues Cost Accounting 1. Studies the master or comprehensive budget, flexible budgeting and capital budgeting. Emphasizes tools for decision making and analysis. Introduces human resource accounting.

ACC 205 Seminar in Accounting 1 Credit

Allows accounting students an opportunity to pursue specific areas of interest at a more advanced level in accounting.

ACC 206 Managerial Accounting 3 Credits

Provides an understanding of accounting records and management decision making, with topics including internal accounting records and quantitative business analysis.

Course Descriptions

ACC 207 Accounting for Government and Nonprofit Entities

3 Credits

Emphasizes the similarities and differences between government, nonprofit and commercial accounting methods and procedures. Exposes students to the basic fund accounting cycle for the general fund and other special funds.

ACC 208 Income Tax 2

3 Credits

Continues Income Tax 1. Studies procedures and problems pertaining to federal and state income tax laws for partnerships and corporations. Includes a review and in-depth study of concepts related to proprietorships covered in Income Tax 1.

ACC 209 Auditing

3 Credits

Covers public accounting organization and operation including internal control, internal and external auditing, verification and testing of the balance sheet and operating accounts, and the auditor's report of opinion of the financial statements.

ACC 212 Business Finance

3 Credits

Introduces basic tools and techniques of financial analysis and management and sources of financial and economic theory as applied to business finance. Includes conceptual materials related to valuation, capital structure formulation and risk-return consideration.

ACC 213 Electronic Spreadsheets in Business

3 Credits

Provides instruction in the use of all modules of a spreadsheet software package including spreadsheet, graphics and database operations and applying these modules to business problems.

ACC 214 Consumer and Commercial Credit

3 Credits

Provides instruction for retail, service, wholesale, and manufacturing firms extending credit to clients. Explores theory, principles and practice of consumer and commercial credit related to business activity and economic impact. Examines managerial functions of collecting and controlling credit to consumers and businesses. Emphasizes credit plans, credit and sales, short-term and intermediate credit and legal aspects of credit.

ACC 215 Credit Procedures and Collections

3 Credits

Examines credit as a means of extending purchasing power, i.e., increased buying power, immediate use of money, merchandise or services and delayed payment. Covers concepts of credit and principles and methods of credit administration involving individuals and businesses. Includes information on credit policy, credit control, credit decision making and legal remedies.

ACC 216 Credit Management	3 Credits
Explores functions of acquiring cycle of credit and management function of control cycle. Combines lectures, discussions, individual research and projects with written and oral presentations of findings and results.	
ACC 217 Intermediate Accounting Lab 1	1 Credit
Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in Intermediate Accounting 1. Uses computerized problems.	
ACC 218 Intermediate Accounting Lab 2	1 Credit
Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in Intermediate Accounting 2. Uses computerized problems.	
ACC 219 Cost Accounting Lab	1 Credit
Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in Cost Accounting 1. Uses computerized problems.	
ACC 220 Special Applications Lab 1	1 Credit
Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in an accounting course. Uses computerized problems.	
ACC 221 Special Applications Lab 2	1 Credit
Presents a series of planned accounting learning problems and activities designed to accompany concepts and theories included in an accounting course. Uses computerized problems.	
ACC 222 Accounting Software Applications	2 Credits
Solves accounting problems using software similar to what is currently used in business. Includes installation, operation and analysis of an accounting software package.	
ACC 223 Advanced Topics in Accounting	2 Credits
Discusses topics of current interest in accounting. Focuses on special interest projects for students in accounting. Includes trips, guest speakers, audio-visual activities and seminars.	
ACC 224 Construction Bidding	3 Credits
Examines bidding procedures, contract documents, contracts, bonds and insurance. Describes materials and installation procedures and how they may	

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affect the bid. Covers the unit of measure of the work, estimating the quantity of materials and the relationship of the specifications.

ACC 225 Integrated Accounting Software 3 Credits

Integrated accounting software package(s) will be used to illustrate computerized accounting practices. The general ledger will be integrated with accounts receivable, accounts payable and other accounting.

**ACC 281-293 Special Topics in Accounting
Technology 1-5 Credits**

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

AFS 101 Fire Technology 3 Credits

Examines the history of firefighting, identifies the types of apparatus and fire protection systems and analyzes the fire problem in general. Provides a basis for the chemical and hazardous properties of combustion and the related by-products.

AFS 102 Fire Apparatus and Equipment 3 Credits

Examines in detail the types of apparatus in use today. Studies pumper, aerials, elevating platforms and special apparatus. Utilizes National Fire Protection Association standards in identifying the proper responses for a given situation. Includes study of apparatus placement on an emergency incident, types of pumps, tests, equipment, drafting, relay, nozzles, fittings and hose lays and maintenance on various types of apparatus.

AFS 103 Firefighting Strategy and Tactics 3 Credits

Prepares the student to make responsible decisions concerning fireground strategies and tactics at the company level. Uses various priority scenarios, including preparing for incident command and commanding the initial response. Emphasizes company operations with basic command decisions.

AFS 104 Building Construction Fire Service 3 Credits

Examines the design principles involved in the protection of a structure from fire involvement. Studies the signs, symptoms and indicators of partial or total building collapse during firefighting operations. Includes the study of legislative codes and laws concerning building design, building fire safety, classification of building construction and blueprint reading.

AFS 105 Fire/Arson Investigation 3 Credits

Focuses on the responsibilities of the firefighter, the investigator and the department in fire scene investigations, fire cause and loss, collection and preservation of evidence, and determination of fire origin. Emphasizes the application and assistance of various scientific aids that assist in the investigation.

AFS 106 Hazardous Materials and Control 3 Credits

Introduces hazardous materials, managing hazardous material incidents, explosive emergencies, gas emergencies, shipping containers, cylinder safety devices, responding to flammable and combustible liquids, oxidizers, poisons, and corrosive and radioactive emergencies. Emphasizes chemical identification and marking, storage, shipping and handling of hazardous substances. Provides instruction in basic monitoring instruments for hazardous areas to protect workers and first responders. Reviews protective clothing and equipment. Emphasizes safety in all of the above areas.

AFS 108 Fire Prevention/Inspection 3 Credits

Examines the function of the fire inspector and the organization of the fire prevention unit. Emphasizes identifying codes and regulations utilized by the inspector, with particular use of the Indiana Fire Code. Includes the legal authority of fire prevention principles, application of the fire code and sound management principles as applied to a bureau.

AFS 109 Fire Department Specifications 3 Credits

Surveys specifications of firefighting apparatus, equipment, protective clothing, facilities, and all other sources of materials necessary to a fire department. Study includes the writing of Standard Operating Guides (SOGs) and blueprint readings.

AFS 201 Fire Protection Systems 3 Credits

Provides a general introduction to fire alarm monitoring devices and extinguishing systems. Develops a strong base for fire protection or commercial applications. Covers fire extinguishing agents, portable fire extinguishers, carbon dioxide systems, dry chemical systems, halogenated systems/foam systems, explosive suppression systems, thermal/smoke/flame detection systems and building monitoring systems. Covers standpipe and sprinkler systems.

AFS 202 Fire Service Management 3 Credits

Studies the principles and functions of administrative and management personnel in the fire service. Topics discussed include departmental organizations, administrative and management procedures, personnel selection, line

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and staff functions, communications, the fire company unit, public relations and current problems in administration.

AFS 203 Incident Command 3 Credits

Emphasizes leadership in the application of knowledge, skills and abilities pertaining to fire hazards and causes, firefighting strategy and tactics, fire technology, safety practices and fire suppression.

AFS 204 Fire Service Hydraulics 3 Credits

Studies compressible fluids including fluid properties, principles of fluid statics, flow system principles, pipe friction and head loss, flow measurements, pumps and other appliances and hydraulic devices. Relates applications to fire protection, water supply and foam systems.

AFS 205 Aircraft Firefighting 3 Credits

Examines the hazards associated with aircraft firefighting. Includes lecture and practical use of airport firefighting equipment, extinguishing agents, strategy and tactics, rescue methods and aircraft design and construction.

AFS 206 Shipboard Firefighting 3 Credits

Focuses on firefighting strategy and tactics for land-based fire department personnel and equipment. Includes a survey of equipment, hook-ups, procedures, incident command, use of foam and support systems on ships.

AFS 207 Fire Safety Hazard Recognition 3 Credits

Provides intensive study of the fire problem. Surveys physical, chemical and electrical hazards and their relationship to loss of property and life, safe storage and handling of hazardous materials.

AFS 208 Industrial Fire Loss Prevention 3 Credits

Provides students with a comprehensive study of industrial fire loss prevention and control management programs. Includes procedures for fire risk and loss control, standards and specifications for equipment, laws, codes, regulations, organization of fire brigades and administrative control of industrial operation.

AFS 209 Fireground Management 3 Credits

Emphasizes the command and control of fire department major operations at an advanced level. Links operations and safety. Studies pre-incident preparation, size-up, incident command systems and incident management with large role-playing incident scenarios for students to solve.

AFS 210 Computers for the Fire Service 3 Credits

Focuses on the need for and uses of the computer in the fire service from computer-ordered dispatch to information retrieval of hazardous materials

control and intervention. Includes the text-editing abilities of computer printing.

AFS 262 Firefighter 2nd Class 3 Credits
Certificates firefighters for state certification as a second class firefighter.

AFS 263 Firefighter 1st/2nd Class 3 Credits
Completes certification at the second class level and begins first class instruction.

AFS 264 Firefighter 3 Credits
Details subjects in fire service enabling students to receive state certification as a first class firefighter. Examines basic tactics, emergency medical care, water supplies, sprinklers, inspection, basic fire apparatus driver, fire service records, law and hazardous materials.

AMT 102 Introduction to Robotics 3 Credits
Introduces students to robotics and automated systems and their operating characteristics. Covers robotics principles of operation and work envelopes. Teaches coordinate systems and how hydraulic, pneumatic and electromechanical systems function together as a system. Covers servo and non-servo controls, system capabilities and limitations and safety. Investigates robot tooling, including welders, grippers, magnetic pickups, vacuum pickups, compliance devices, adhesive applicators and paint sprayers.

AMT 103 Solid State Fundamentals 3 Credits
Studies the fundamentals of solid-state active devices which are used in automated manufacturing equipment. Introduces students to the theory of solid-state active devices and provides experience in identification, applications and handling of the common types of devices.

AMT 201 Manufacturing Systems Control 3 Credits
Introduces the field of industrial controls. Teaches principles of control systems and how they are applied to a production system to achieve automation. Systems included in the course are stepper motors, programmable logic controllers, microprocessors, computers and feedback systems. Emphasizes programmable logic controllers and the local area network.

AMT 202 Work Cell Design and Integration 3 Credits
Studies principles pertaining to design and implementation of robots in industrial work cells. Emphasizes selection of the best work site and robot system, application of cell sensor, development of cycle times, economic analysis, safety considerations, proposal preparation and human resources development.

Course Descriptions

AMT 203 Automation Electronics 3 Credits

Demonstrates the operation and application of electronic devices in the automation field. Includes linear integrated circuits, sensors and interfacing systems, actuators and drive controls and process control techniques.

AMT 204 Automation Management 3 Credits

Covers basic principles and applications for planning and controlling production operations and improvement programs. Includes system characteristics and solutions for production process and service operation problems; methods analysis; cost estimating; facilities planning, tooling and services acquisition and maintenance; production, project, and program scheduling; materials and inventory management; safety and loss prevention; decision-making tools and evaluation of alternatives.

AMT 205 Automated Manufacturing Systems 3 Credits

Provides instruction in selecting equipment, writing specifications, designing fixtures and interconnects, integrating systems, providing interfaces and making the assigned systems operational to produce "marketable" products.

AMT 240 Introduction to Computer Integrated Manufacturing 3 Credits

Includes the study of all major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Includes project planning which will be formally documented and presented by students.

AMT 241 Computer-Integrated Manufacturing Project 3 Credits

Continues the study of the major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Covers advanced CIM applications and includes the implementation of the project planned in AMT 240 in a realistic CIM environment.

AMV 100 Introduction to Transportation 3 Credits

Introduces students to the work environment of a transportation repair facility. Presents historical and future trends with emphasis in career/placement requirements. Safety, OSHA, EPA, and environmental standards are presented. Introduction to the eight areas of ASE technician certification and related tools are presented.

AMV 101 Chassis and Suspension Principles 3 Credits

Describes various frame designs and suspension systems used in modern vehicles. Includes repair and replacement of steering linkages and chassis components, both front and rear.

AMV 107 Engine Principles and Design 3 Credits

Examines engine dynamics, theory of engine operation and design characteristics of all engine assemblies and subassemblies. Emphasizes removal, tear down, visual inspection, precision measuring inspection, clean up of components and parts and rebuilding engines according to industry standards.

AMV 113 Electricity for Transportation 3 Credits

Introduces fundamentals of electricity and electrical behavior as applied to modern transportation. Includes extensive use of digital multimeters and circuit troubleshooting. Presents an intensive study of the construction, function and principles of operation of starting motors, charging systems and their control systems with emphasis on diagnosis and bench repair.

AMV 202 Computer Engine Controls 3 Credits

Examines computerized ignition, carburetor, fuel injection and sensors for engine controls on late model passenger cars. Covers theory, diagnostic procedure and repair procedure of the CCC, MCU, EEC-IV, lean burn and other spark control systems.

AMV 281-293 Special Topics in Automotive Technology 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

AOT 103 Information/Word Processing Concepts 3 Credits

Introduces the concept of information/word processing systems. Offers hands-on experience in the operation of word processing systems.

AOT 105 General Office Procedures 3 Credits

Emphasizes procedures and the changing responsibilities for the entry-level secretary/receptionist in today's offices. Identifies the skills and attitudes needed to succeed in the business environment.

AOT 106 Refresher Shorthand 1 Credit

Provides instruction in a lab setting to bring shorthand skills to an employable level. Emphasizes three areas of skill development: speed, theory and transcription.

AOT 107 Refresher Typewriting 1 Credit

Provides instruction in a lab setting to bring typing skills to an employable level. Concentrates on four areas of skill development: speed and accuracy, business letters, tables and tabulations, and reports.

Course Descriptions

AOT 108 Shorthand/Notetaking I **3 Credits**

Emphasizes basic theory, brief forms and speed in reading from notes and the textbook. Focuses on the correct way to write shorthand. Uses dictation with emphasis placed on writing and transcription techniques.

AOT 109 Professional Development **2 Credits**

Enables students to analyze and improve themselves in terms of posture, weight control, personal hygiene, grooming, wardrobe, personality, communication and job application skills for success in employment. Includes resume preparation and interviewing skills.

AOT 111 Shorthand/Notetaking 2 **3 Credits**

Develops dictation, notereading and transcription skills through drills and tests. Emphasizes speed, accuracy and use of correct English. Reinforces and builds on principles and skills learned in Shorthand/Notetaking I.

AOT 113 Office Calculating Machines **1 Credit**

Teaches students to use the 10-key electronic printing/display calculator. Develops competence with the desk calculator and familiarity with the types of business problems they commonly solve.

AOT 116 Business Communications **3 Credits**

Develops communications skills for use in business and industry. Focuses on writing effective business letters, memos, reports, and reviewing grammar and punctuation rules.

AOT 119 Document Production **3 Credits**

Emphasizes increasing speed, improving accuracy, developing and applying formatting skills, applying communication and language arts skills, and learning document production techniques.

AOT 202 Information/Word Processing Applications **3 Credits**

Knowledge acquired from Information/Word Processing Concepts will be further enhanced as more sophisticated features of a word processing package are learned and applied.

AOT 206 Shorthand/Notetaking 3 **3 Credits**

Reviews fundamentals learned in Shorthand/Notetaking 1 and 2. Emphasizes skill in taking new matter dictation with more emphasis on transcribing mailable letters. Stresses essentials of good English principles.

AOT 207 Office Automation Applications 3 Credits

Provides instruction in the use of computers and computer software. Covers mastery of spreadsheet and database software programs. Explores the integration of these packages with a word processing package. Assists students in applying their knowledge of office automation systems to make decisions, solve problems, and facilitate information in an office support setting.

AOT 208 Microcomputer Word Processing 2 Credits

Covers production techniques including typing, formatting, editing and printing variable output, and use of the electronic dictionary. Includes production applications such as merging letters with mailing lists, making math computations during document creation, sorting files and printing out newsletters and other multiple-column formats.

AOT 210 Office Systems and Technology Management 3 Credits

Acquaints students with the management of office systems, technology and procedures. Includes the improvement of productivity through technology and systems, optimization of personnel resources, systems selection, configuration, design and implementation and procedures development.

AOT 211 Word Processing Files Management 3 Credits

Covers designing and managing the file system by creating, adding, revising and deleting files. Demonstrates how to create, use, change and update files on a word processing system or personal computer using database software.

AOT 212 Micro Word Processing 3 Credits

Deals with business applications of word processing software on microcomputer work stations. Includes practical applications in the use of a microcomputer word processing software.

**AOT 213 Advanced Information/Word Processing 3 Credits
Applications**

Develops the ability to transfer information processing skills to a second word processing package. Allows the students to apply these skills to the legal, medical or office automation option.

AOT 214 Desktop Publishing 3 Credits

Provides computer skills in the production of camera-ready materials through electronic publishing.

AOT 215 Legal Term/Practice 3 Credits

Provides basic understanding of the secretarial duties and responsibilities pertinent to the legal profession. Presents ethics of law and professional conduct. Includes laboratory experience.

Course Descriptions

AOT 217 Machine Transcription/Medical I 2 Credits

Provides basic understanding of the techniques of dictation and transcription used by medical assistants.

AOT 219 Specialized Formatting/Transcription 3 Credits

Emphasizes production techniques, which include correspondence, business forms, manuscripts, tabulations and secretarial projects. Emphasizes composition skills and the application of communications skills. Includes transcription from machine dictation and an introduction to products, services and terminology encountered in business organizations.

AOT 220 Document Management 3 Credits

Focuses on management and control of documents from creation to disposition, using manual, automated and electronic media. Discusses records management personnel, equipment and procedures, including computer database applications.

AOT 221 Office Management and Procedures 3 Credits

Provides a culminating study of the management of business office systems and procedures. Covers problem-solving techniques, selection of office structures, personal and organizational dynamics, cooperative and teamwork activities, communication abilities and job search skills.

AOT 224 Advanced Desktop Publishing 3 Credits

Provides hands-on experience and familiarizes students with specific advanced design and layout techniques and practical applications of desktop publishing.

AOT 281-293 Special Topics in Administrative Office Technology 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

ART 102 Introduction to Illustration 3 Credits

An introductory course designed to explore the factors involved with developing illustrations and working with illustrators. Concepts, styles, techniques, design, and communication are discussed. Students can create finished illustrations using basic techniques or study and report on specific illustrators.

ART 111 Drawing for Visualization 3 Credits

Introduces students to the tools and methods of drawing. Presents drawing as a catalyst to seeing and a way of recording ideas. Gives students the necessary drawing preparation for the study of graphic design.

ART 112 Electronic Layout 3 Credits

Deals with advanced issues of designing for communication. Develops creative problem solving skills. Uses the computer as a tool for executing layouts for client approval. Produces practical samples for student portfolios.

ART 114 Graphic Design 3 Credits

Introduces design for communication. Teaches the steps in design development and the difference between message and concept. Produces samples for student portfolios.

ART 115 Typography 3 Credits

Addresses the issues pertinent to the proper and creative use of type and the enhancement of communication. Covers the history of type, typographic terminology, design, copyfitting attention to aesthetics, common sense and how we read.

ART 116 Electronic Illustration 3 Credits

Provides instruction in illustration techniques using computer software designed for creating illustrations, technical drawings, logos, packaging, maps, charts and graphs. Emphasis is on preparing effective, creative illustrations for various media applications in an efficient, productive manner.

ART 117 Production 3 Credits

Focuses on the hand assembly of art and type for the printer's camera. Covers production terminology, printing process, hand preparation of illustrative materials for reproduction and preparation of mechanical art using hand skills. Produces samples for student portfolios.

ART 202 Special Projects I 3 Credits

Accommodates student interest in specific areas or in areas where there is a need to strengthen skills. Requires performance and completed work to be portfolio quality and reflect applicability to the main areas of the program.

ART 203 Independent Study I 3 Credits

Provides students with opportunities to design projects for specific areas of interest. Requires the project plan to be approved by the instructor. Restricts work to student program area and requires it to be portfolio quality.

ART 205 Special Projects II 3 Credits

Provides specific experience in selected areas. Recommends completion of two projects. Requires instructor approval for additional projects.

Course Descriptions

ART 206 Independent Study II	3 Credits
Builds skills in specific areas of a visual communications program or a related program such as marketing, advertising and externship or supervision.	
Requires instructor approval for program projects. Requires program chairperson's approval to elect non-program coursework.	
ART 210 Illustration Techniques I	3 Credits
Develops dexterity in the application of transparent and opaque media.	
ART 211 Creative Illustration Concepts	3 Credits
Introduces montage illustration through experience in actual problems.	
ART 217 Advanced Graphic Design	3 Credits
Provides experience with advanced design projects which communicate a common theme through several different media. Provides opportunity for students to work in a team environment.	
ART 218 Digital Productions	3 Credits
This course addresses the issues of preparing camera-ready art electronically. Topics covered are preparing computer files for service bureau output, scanning and printing resolution, color matching and color models, trapping and computer system operations and troubleshooting.	
AST 101 Chassis and Suspension Principles	3 Credits
Describes various frame designs and suspension systems used in modern vehicles. Includes repair and replacement of steering linkages and chassis components, both front and rear.	
AST 102 Two-/Four-Wheel Alignment	3 Credits
Covers the principles of two- and four-wheel alignment and wheel balance. Emphasizes practical work experience in the lab covering all the alignment angles.	
AST 103 Automotive Electronics	3 Credits
Introduces electrical theory and automotive circuits and components. Emphasizes electron theory, electrical circuits, terms, wiring diagrams and batteries. Introduces electrical circuit and component test equipment.	
AST 104 Start and Charge Systems	3 Credits
Studies construction, function and principles of operation of starting motors, charging systems and their control systems with emphasis on diagnosis and bench repair.	

AST 105 Fuel Systems 3 Credits

Studies automotive fuel systems: single, double and four barrel carburetors, fuel injection systems and emission controls as they apply to the fuel system. Focuses on shop procedures for troubleshooting, servicing, replacing or overhauling fuel system and emission control components.

AST 106 Electronic Ignition Systems 3 Credits

Introduces basic principles of electronic ignition systems. Includes functions and testing of conventional breaker point ignitions.

AST 108 Electrical Accessory Systems 3 Credits

Presents the functions, construction, principles of operation and troubleshooting techniques for the accessories of automotive vehicles. Includes electrical accessories such as windshield wipers and washers, power seats, power windows, adjustable steering wheels, power tailgates and power headlight doors.

AST 109 Small Gas Engine Maintenance 2 Credits

Presents theory, service and repair of small gas engines and their components with an emphasis on safety, measurements, lubricants, fuels and engine design.

AST 110 Small Gas Engine Overhaul 2 Credits

Covers disassembly, inspection, measuring, cleaning, machine repair and proper assembly techniques applicable to small gas engine overhaul. Includes overhaul of carburetor and ignition systems, and maintenance procedures on rebuilt two-cycle and four-cycle engines.

AST 111 Basic Auto Care 2 Credits

Provides basic instruction in auto maintenance for the automobile owner. Covers routine maintenance, economical operation, elimination of objectionable noises, care of interior and exterior appearance, warranty regulations and emergency road procedures.

AST 112 OSHA/Automotive Service 3 Credits

Studies safety practices needed for routine automotive shop work. Provides opportunity for students to earn Red Cross certification in first aid. Stresses fire hazard, chemical handling and eye safety.

AST 113 Automotive Diesel and Engine Theory 3 Credits

Covers operation of the diesel engine and differences between a diesel and gas engine. Includes instruction on shop equipment, fuels, oils, seals, bearings, lubrication and cooling systems.

Course Descriptions

AST 114 Service Organization and Parts 2 Credits

Presents facility and personnel requirements for efficiently-run parts and service departments. Emphasizes principles, practices and procedures necessary to effectively operate the departments. Includes manufacturer catalogs and component numbering systems, methods of scheduling time and techniques for obtaining maximum work efficiency from technicians and specialists.

AST 201 Heating and Air Conditioning Principles 3 Credits

Provides an in-depth study of automotive air conditioning and heating. Emphasizes the operation and theory of air conditioning and its components. Includes a study of vacuum and electrical control circuits.

AST 203 Engine Rebuild 3 Credits

Covers precision machines, tools and equipment needed for rebuilding today's modern engine. Includes repair, proper assembly and installation techniques applicable to the modern engine.

AST 204 Automatic Transmission/Transaxle 3 Credits

Deals with construction, and functions and principles of operation. Emphasizes practical work experience in the lab where students will overhaul automatic transmissions and transaxle assemblies.

AST 205 Manual Transmission/Transaxle 3 Credits

Presents theory and overhaul procedures related to the manual transmission/transaxle, including clutches and transfer cases and diagnosis and overhaul of the manual power train.

AST 206 Heating and Air Conditioning Service and Repair 3 Credits

Covers diagnosis, service and repair procedures of the heating/air conditioning system. Includes replacement and overhaul procedures for components related to heating/air conditioning systems.

AST 207 Engine Performance 3 Credits

Includes advanced instruction in the theory, diagnosis and repair of computer-controlled ignition systems and fuel systems on late-model vehicles using state-of-the-art diagnostic equipment. Emphasizes recommended manufacturer methods for servicing the computer-controlled ignition system.

AST 208 Differentials/Drivelines 3 Credits

Studies differential and driveline theory and overhaul. Includes overhaul and service procedures applicable to gear sets, bearings and seals. Includes theory

and overhaul procedures related to the driveshaft and axle assemblies for front and rear wheel drive vehicles.

Covers theory, service and repair of automotive braking systems and their components. Emphasizes hydraulic theory and the repair and service of booster units, master cylinder, wheel cylinder, caliper rebuilds and drum and rotor service.

AST 210 Modified Automotive Engines **3 Credits**

Provides instruction for advanced transportation students and employed technicians to familiarize them with higher performance engines, durability and economy. Stresses individuality in constructing performance engines.

AST 212 Comprehensive Diagnosis I **3 Credits**

Provides students with the opportunity to diagnose and repair the complete automotive system according to manufacturers' recommendations and specifications. Requires students to complete repair orders assigned by the instructor.

AST 213 Comprehensive Diagnosis II **3 Credits**

Provides opportunity for students to complete work based on flat rate hours. Includes recordkeeping, parts procurement and methods for determining unpaid labor lost on flat rate.

AST 215 ASE Certification Review **3 Credits**

Prepares professional automotive technicians for the National Institute for Automotive Service Excellence certification tests. Reviews all eight areas of testing and provides sample certification tests. Lectures will stress theory of operation and diagnostic logic. Labs will stress professional repair and testing techniques.

AST 220 Transaxle and Driveline Service **3 Credits**

Covers complete diagnostic procedures for automatic transaxles, computer shift transaxles, drive axles and shafts. Emphasizes on-car repair and removal procedures of transaxles and driveline components.

AVT 101 Aviation Fundamentals **3 Credits**

Presents an overview of the aviation industry. Introduces students to many aspects and processes involved in aviation.

AVT 102 Airframe Materials and Processes **6 Credits**

Develops correct safety practices, comprehensive knowledge and technical skills required to perform maintenance procedures related to weight and

Course Descriptions

balance, aircraft hardware, blueprint reading, inspection fundamentals, wood structures and aircraft coverings and finishes. Emphasizes the Federal Aviation Administration regulations that pertain to the airframe and powerplant mechanic.

AVT 103 Airframe Structures 6 Credits

Develops correct safety practices, comprehensive knowledge and technical skills required to perform maintenance operations related to the use of precision measurements, hand tools, aircraft welding and rigging and assembly. Emphasizes the Federal Aviation Administration regulations that pertain to the airframe and powerplant mechanic.

AVT 104 Introduction to Avionics 3 Credits

Provides an overview of the aviation electronics industry. Introduces students to job descriptions, duties, activities and processes involved in manufacturing, repairing and maintaining aircraft avionics systems.

AVT 105 Powerplant Systems I 3 Credits

Develops correct safety practices, comprehensive knowledge and technical skills required for aircraft maintenance as prescribed by the Federal Aviation Administration. The course covers inspection and repair of engine lubrication system components, overhauling carburetors and the repair of engine fuel metering system components. Includes the inspection, servicing and troubleshooting of turbine engine fuel metering system components. A total of 99 hours instructional time is required.

AVT 201 Airframe Systems and Controls I 5 Credits

Presents basic theory and knowledge of aircraft fuel systems, fluid lines and fittings. Develops correct safety practices, comprehensive knowledge and technical skills required to perform maintenance procedures related to aircraft fuel systems, landing gear systems and cabin atmosphere control systems. Emphasizes Federal Aviation Administration regulations that pertain to the airframe and powerplant mechanic.

AVT 202 Airframe Systems and Controls II 6 Credits

Develops correct safety practices, comprehensive knowledge and technical skills required to perform maintenance procedures related to aircraft instrument systems, communication and navigation systems, position and warning systems, ice and rain control systems and fire protection systems. Emphasizes Federal Aviation Administration regulations that pertain to the airframe and powerplant mechanic.

AVT 204 Airframe Certification 1 Credit

Reviews general and airframe courses and curriculum. Emphasizes

preparation for the Federal Aviation Administration general and airframe written examinations.

AVT 205 Navigation and Communications Systems 3 Credits

Gives students exposure in using correct safety practices and developing comprehensive knowledge and technical skills required to repair and maintain complex aircraft navigation and communication systems.

AVT 206 Aviation Control Circuits 3 Credits

Develops advanced skills and emphasizes FCC and aircraft controls and circuitry. Studies auto pilot, approach linkages, safety, positioning warning systems and the glass cockpit.

AVT 207 Powerplant Systems II 3 Credits

Develops correct safety practices, comprehensive knowledge and technical skills required for aircraft maintenance as prescribed by the Federal Aviation Administration. The course covers inspection and repair of engine fire detection and extinguishing systems and powerplant electrical and ignition systems including turbine engine pneumatic starting systems. A total of 103 hours of instructional time is required.

AVT 208 Powerplant Inspection and Troubleshooting 4 Credits

Develops correct safety practices, comprehensive knowledge and technical skills required for aircraft maintenance as prescribed by the Federal Aviation Administration. The course covers the removal, inspection and installation of a piston engine and inspection and repair of reciprocating engines. Includes performance of powerplant conformity and airworthiness inspections, repair of engine exhaust system components and turbine thrust reverser systems and inspection and repair of induction systems including superchargers. A total of 183 hours of instructional time is required.

AVT 209 Propellers 3 Credits

Develops correct safety practices, comprehensive knowledge and the technical skills required for aircraft propeller maintenance procedures with specific emphasis on Federal Aviation Administration regulations that relate to the airframe and powerplant mechanic.

AVT 210 Powerplant Overhaul 4 Credits

Develops correct safety practices, comprehensive knowledge and the technical skills required for aircraft engine overhaul procedures with specific emphasis on Federal Aviation Administration regulations that relate to the airframe and powerplant mechanic.

Course Descriptions

AVT 211 Powerplant Certification

3 Credits

Reviews the powerplant courses and curriculum. Prepares students for the FAA Powerplant written examinations.

AVT 220 Airframe

3 Credits

Develops correct safety practices, comprehensive knowledge and technical skills required for aircraft maintenance as prescribed by the Federal Aviation Administration. The course covers welding, inspection and servicing of air-conditioning, pressurization and oxygen systems and components, checking and servicing fuel management and dump systems and the performance of aircraft conformity and airworthiness inspections. A total of 126 hours instructional time is required.

AVT 221 Powerplant

3 Credits

Provides an overview of advanced turbine engine technology. Introduces students to the latest engines and processes utilized and developed within the aviation community.

AVT 281-293 Special Topics in Aviation Technology

1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

BCT 102 Construction Materials

3 Credits

Develops skills in identifying building materials commonly used in modern building construction. Provides experience in the application of locally accessible materials.

BCT 104 Floor and Wall Layout and Construction

3 Credits

Examines the design and construction of floor and wall systems. Develops skills needed for layout and construction of floor and wall systems from blueprints and professional planning documents.

BCT 105 Roof Construction

3 Credits

Studies the design and construction of roof systems. Emphasizes use of the framing square for traditional rafter and truss roofing. Instructs students in additional up-to-date techniques.

BCT 107 Furniture Design and Construction

3 Credits

Develops skills in the design, layout and construction of furniture. Introduces furniture styles, types of materials used and methods of construction.

BCT 108	Cabinetry Fabrication Technique	3 Credits
Develops skills in the design, layout and construction of cabinets. Provides opportunities for students to lay out and fabricate faceplates and cases for cabinets.		
BCT 109	Furniture Refinishing and Repair	3 Credits
Develops knowledge and skills in the technology of refinishing and repairing furniture. Introduces procedures used in stripping, bleaching, caning, veneering and various types of wood fillers.		
BCT 110	Cabinetry	3 Credits
Introduces the basic skills and technology of cabinet making, focusing on cabinet design and layout, terminology, tools and skill requirements.		
BCT 111	Woodworking Fundamentals	3 Credits
Introduces the basic skills and technology of woodworking, focusing on tool and machine operations. Introduces proper jointry and material selection.		
BCT 112	Millwork	3 Credits
Introduces the basic skills and technology of the production of wood products, focusing on machinery set-up and operations for making moldings, door frames and picture frames.		
BCT 113	Cabinetry/Furniture Door and Drawer Assembly	3 Credits
Develops skills in the design, layout and construction of cabinet/furniture doors, drawers and counter tops. Introduces types of hardware and installation methods.		
BCT 114	Exterior Trim	3 Credits
Develops necessary skills in the finishing of the exterior of a building. Provides training in the installation of the cornice, windows, doors and various types of sidings used in today's market place.		
BCT 115	Auxiliary Building Design and Construction	3 Credits
Develops carpentry skills in construction of garages, storage buildings, wood decks, patios, privacy fences and gazebos.		
BCT 201	Residential Wiring	3 Credits
Covers the practice of residential wiring, including electrical service, metering equipment, lighting, switches, outlets and other common components and methods of installation and maintenance of the residential wiring system in accordance with the current National Electrical Code.		

Course Descriptions

BCT 202 Plumbing Fundamentals 3 Credits

Studies the operation and function of the home plumbing system. Introduces pipe drawings and isometric pipe layout and blueprint symbols. Demonstrates how to rough in plumbing and install drainage, water systems, fixtures and water heaters in compliance with the plumbing code.

BCT 203 Masonry Concrete Fundamentals 3 Credits

Covers materials and methods of construction with concrete block, brick and forming for poured concrete. Includes study in the preparation of the building site.

BCT 205 Advanced Projects in Building Construction I 3 Credits

Applies problem solving to common problems in construction. Emphasizes the cooperation between several trades in the construction industry.

BCT 206 Advanced Projects in Building Construction II 3 Credits

Applies problem solving skills to common challenges in construction. Emphasizes the cooperation between several trades in the construction industry allowing students to practice necessary skills to resolve the problem. Concentrates on decision-making skills.

BCT 207 Carpentry—Light Commercial 3 Credits

Introduces carpentry skills required in light commercial construction. Focuses on construction methods and materials used for office buildings, clinics, small churches and other non-residential structures.

BCT 208 Project Planning Production 3 Credits

Provides opportunity for students to develop knowledge and skills under limited supervision in the design, selection of materials, project planning and production systems used in the fabrication of cabinets and furniture.

BCT 210 Vinyl and Aluminum Siding Applications 3 Credits

Provides in-depth examination of common and unusual problems encountered by an aluminum siding applicator on new jobs and existing structures. Includes sidings, soffit, fascia, rain gutter and covering of trims and windows. Emphasizes actual installation and a wide variety of experiences. Includes standing seam and corrugated metal roofing, metal carports, awnings, metal storage buildings, ventilators and flashings.

BCT 211 Construction Organization and Procedures 3 Credits

Introduces organization and management procedures focusing on subcontracting, equipment and tool inventories, job materials, codes, inspections and permits.

BCT 213 Motors and Motor Controls 3 Credits

Studies the wiring and design of motor control circuits, including circuit and conductor calculations, motor circuits and controls. Includes control transformers and service, circuit layout for motor control and machine tool hook-up and control.

BCT 214 Wall and Floor Coverings 3 Credits

Covers modern materials and techniques of interior floor and wall coverings. Provides instruction on assessing the durability and maintenance of materials and techniques in correct installation procedures.

BCT 215 Basic Theory of Paint and Stain 3 Credits

Introduces the basic skills and techniques of finishing wood products, including proper preparation, staining and finishing procedures.

BCT 216 Advanced Residential Design 3 Credits

Studies residential floor plans and elevation. Analyzes contemporary living patterns, cost, privacy, convenience and efficiency coordinated with needs. Compares exterior styles for cost and aesthetic values. Studies multiple housing, duplex arrangements, apartments and condominiums. Provides students with opportunities to do floor plans, elevations and perspective drawings to incorporate the conclusions reached from the above research.

BCT 217 Plumbing Mechanical Installation 3 Credits

Develops skills in the use of plumbing equipment. Covers residential and commercial installations, troubleshooting, and service and repair in conformance with codes.

BCT 218 Commercial Plumbing Installation and Estimating 3 Credits

Offers in-depth study of commercial plumbing with emphasis on code requirements and commercial blueprints. Instructs in estimating the cost of a complete plumbing system.

BCT 219 Survey and Measurement 3 Credits

Presents fundamentals of surveying, including use of transit, reading angles, land description, restrictions and legal problems. Covers topographical maps and their use.

BCT 220 Electrical Troubleshooting Techniques 3 Credits

Presents methods and techniques for troubleshooting appliances, motors, motor controls, relay wiring, residential wiring, commercial wiring and industrial wiring systems.

Course Descriptions

BCT 221 Interior Trim 3 Credits

Develops basic knowledge, skills and awareness of interior trim. Provides training in installation of drywall, moldings, interior doors, kitchen cabinets and baseboard moldings.

BCT 222 Commercial/Industrial Wiring 3 Credits

Introduces wiring methods and material selection for commercial and industrial wiring systems. Studies mechanical installation of hardware as well as electrical design, layout and installation. Emphasizes tool use and material selection and installation.

BCT 223 Plumbing Design and Installation 3 Credits

Provides techniques for working with pipes and fittings. Studies residential and commercial electrical hot water heating systems, private well water systems and electrical components of plumbing systems.

BCT 224 Energy Conservation Techniques 3 Credits

Offers an in-depth study of energy conservation techniques currently being applied and developed. Covers new materials, construction concepts and alternative approaches being developed to reduce energy consumption.

BCT 225 Fabrication 3 Credits

Studies concepts and techniques of industrialized housing. Covers pre-fabrication, fabrication, jigs and rigging, including mobile homes, sectional homes and modular homes.

BCT 226 Construction Supervisory Training 3 Credits

Examines the duties and responsibilities of the supervisor of a construction crew. Develops leadership abilities and techniques necessary to deal with special problems in daily construction work. Gives attention to adjusting to the role of supervisor and indicates what is expected from each member of the crew.

BCT 227 AC/DC Circuits 3 Credits

Studies basic electrical principles for both DC and AC circuits. Includes electron theory, Ohm's Law, Watt's Law, Kirchoff's laws, series circuits, parallel circuits, series-parallel circuits, electromagnetism and electromagnetic induction, inductance and inductive circuits, LR time constants, LR circuits, RC circuits, LRC circuits, impedance and phase angles for current voltage, resistance, reactance and power. Studies components including resistors, inductors, capacitors and transformers.

BCT 231 Construction Supervision 3 Credits

Develops required skills in construction supervision.

BKR 101 Yeast Raised Breads and Rolls 3 Credits

Prepares students to produce a variety of yeast raised breads and rolls using both straight dough and sponge dough methods. Emphasizes proper mixing, fermentation, make-up proofing and baking.

BKR 102 Plasticized and Sweet Doughs 3 Credits

Prepares students to produce a variety of pastries. Emphasizes proper proofing, baking and finishing. Focuses on sanitation, hygienic work habits and their conformance with health regulations.

BKR 103 Internship 3 Credits

Requires students to produce yeast raised and plasticized/sweet dough products for limited retail sale for a 12-week period. Studies merchandising and marketing, planning, production, controlling scrap, cash recaps and all pertinent phases of retail bake shop operation.

BKR 201 Cakes, Icings, and Fillings 3 Credits

Requires students to produce and finish a variety of cakes. Emphasizes application techniques, color coordination and the flavor and texture of fillings. Practices the techniques of basic cake decorating. Emphasizes sanitation, hygienic work habits and their conformance with health regulations.

BKR 202 Classical Cake Decorating 3 Credits

Presents the six different classical styles of cake decorating, the production of gum paste objects which accompany the styles, the use of royal icings and investigates the similarities and differences between the six styles. Students will be required to produce examples of each style and technique, to include two practical examinations.

BKR 204 Externship 3 Credits

Requires practical work experience in chosen area of specialization. Students work in an approved site for a minimum of 144 hours, complete and submit a detailed log book, and have at least two site evaluations by immediate supervisor, one evaluation by faculty facilitator and a final group conference.

BUS 101 Introduction to Business 3 Credits

Examines the U.S. business system in relation to the nation's economy. Studies business ownership, organization principles and problems, management, control facilities, administration and development practices of American business enterprises.

BUS 102 Business Law 3 Credits

Describes the judicial system and the nature and sources of law affecting business. Studies contracts, sales and negotiable instruments with emphasis on

Course Descriptions

Uniform Commercial Code applications. Includes appropriate remedies for breach of contract and tort liabilities. Examines business structures and agency.

BUS 103 Office Administration **3 Credits**

Covers broad areas of administrative office services and management, including office organization, site location, layout and environment, records management, systems controls, office communication services and devices.

BUS 104 Investment **3 Credits**

Presents the basis of investing, with attention to the various ways in which investment vehicles operate.

BUS 105 Principles of Management **3 Credits**

Describes the functions of managers, including the management of activities and personnel. Focuses on application of guidance principles in management.

BUS 107 Transportation Law **3 Credits**

Reviews judicial systems and regulatory agencies, regulatory acts, Motor Carrier Act of 1980, Staggers Rail Act of 1980, obligations, rights and liabilities, regulation of rates and rate-making agreements.

BUS 108 Personal Finance **3 Credits**

Emphasizes management of individual financial resources for growth and maintenance of personal wealth. Covers home buying and mortgage financing, installment financing, life and health insurance, securities, commodities and other investment opportunities.

BUS 202 Human Resource Management **3 Credits**

Focuses on the activities of human resource management, with emphasis on employer-employee relations, job analysis and evaluation, salary administration, work measurement and standards, performance appraisal and legal compliance.

BUS 203 Entrepreneurship **3 Credits**

Explores business operations for the self-employed or managers employed in a small business enterprise.

BUS 204 Case Problems in Management **3 Credits**

Applies business concepts and principles to specific case studies or problems.

BUS 205 Risk Management 3 Credits

Examines risk faced by business firms and considers ways of handling them. Covers property, liability and personal losses, with attention to insurance contracts and their uses. Studies individual life, health and pension insurance, public policy, government regulations and social insurance programs.

BUS 207 Introduction to International Business 3 Credits

Provides an overview of the international environment within which business operates today. Demonstrates the global relationships between business activities and how events in one part of the world can influence business decisions and activities in other parts of the world.

BUS 208 Organizational Behavior 3 Credits

Studies human behavior in organizations at the individual and group level, including the effect of organizational structure on behavior. Focuses on using organizational behavior concepts for developing and improving interpersonal skills.

BUS 210 Managerial Finance 3 Credits

Improves decision making skills related to the financial resources of a firm. Includes techniques of financial analysis, time value of money, capital budgeting and risk.

BUS 240 Introduction to Computer Integrated Manufacturing 3 Credits

Includes the study of all major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Covers the planning of a project which will be formally documented and presented by students and implemented in BUS 241.

BUS 241 Computer-Integrated Manufacturing Project 1-6 Credits

Covers the major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Covers advanced CIM applications and includes the implementation of a project in a realistic CIM environment.

BUS 280 Co-op/Internship 1-6 Credits

Gives students the opportunity to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

Course Descriptions

BUS 281-293 Special Topics in Business Administration 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

CHD 121 Introduction to Early Childhood Profession 3 Credits

Introduces the philosophy of early childhood education. Includes theories of discipline, parent involvement, self-concept and an overview of various early childhood settings. Includes lectures, field trips and observations.

CHD 122 Child Growth and Development 3 Credits

Studies the physical, social, emotional and cognitive development of children from conception to age eight, as well as their quality care and education. Includes lectures and observations.

CHD 123 Health, Safety, and Nutrition 3 Credits

Analyzes basic safety, health, and nutrition needs. Emphasizes applications related to early childhood programs.

CHD 124 Developmental and Cultural Awareness 3 Credits

Provides a basic understanding of the anti-bias/multi-cultural emphasis in the field of early childhood. Analyzes developmentally appropriate practices, theory and implementation for various early childhood settings. Includes lectures, field trips, review of current literature and observations.

CHD 125 Curriculum in the Creative Arts 3 Credits

Examines materials, methods and teaching of creative arts to young children. Offers appropriate music, movement, art and drama experiences for use in early childhood settings. Reviews theories of development of the young child.

CHD 130 Child Development Practicum I 4 Credits

Provides opportunity for practical experience through observation and supervised participation in child care settings. Requires successful completion of the practicum to advance to Practicum II.

CHD 131 Seminar in Guidance Techniques 2 Credits

Surveys positive guidance techniques and skills that are effective with young children. Provides student with the opportunity to observe children and attempt to understand their needs.

CHD 206 Early Child Administration 3 Credits

Introduces principles of managing a child care program. Emphasizes the manager's role including personnel and program administration and fiscal management. Explores client-community relations.

CHD 207 Families in Transition 3 Credits

Examines the stages of the family life cycle and interpersonal relationships among family members.

CHD 211 School Age Programming 3 Credits

Examines materials, methods and teaching styles for creative experiences for school age children. Offers appropriate experiences in music, movement, art, and drama for use in school age child care settings. Reviews theories of adolescent growth and development.

CHD 212 Adolescent Child Growth and Development 3 Credits

Studies in a lecture/laboratory setting the physical, social, emotional and cognitive development of children 8-15 years old.

CHD 213 Infant/Toddler Care Programming 3 Credits

Studies the physical, social, emotional and cognitive development of children 0-36 months old in a lecture/laboratory setting.

CHD 216 The Exceptional Child 3 Credits

Provides an introduction to caring for the exceptional child. Includes theories and practices for producing optimal developmental growth. Develops teaching techniques. Explores public policy, mainstreaming, early intervention and IEPs. Explores the types of exceptional children and how to help them.

CHD 217 Skills for Parenting 3 Credits

Focuses on skill development to increase parental effectiveness in understanding young children, building their self-esteem, communicating with them, setting appropriate boundaries and nurturing children's emotional and social development.

CHD 218 Introduction to In-Home Care 3 Credits

Reviews child care offered in a home-like setting. Includes providing safe, healthy learning environments in the home setting, parent-provider relationships and recommendations for developing a professional support system.

CHD 221 Emerging Literacy in Young Children 3 Credits

Provides understanding of the development and acquisition of language. Explores and evaluates literature for young children. Introduces audio-visual

Course Descriptions

material, methods, techniques and various types of equipment which are utilized in early childhood programs.

CHD 225 Cognitive Curriculum **3 Credits**

Reviews cognitive theories to develop appropriate problem solving, math, science and social studies skills in early childhood settings. Reviews multi-cultural education.

CHD 230 Child Development Practicum II **4 Credits**

Provides opportunity for practical experience through observation and supervised participation in child care settings.

CHD 231 Seminar II - Issues in Early Childhood Education **2 Credits**

Companion course to CHD 230. Focuses on the integration of knowledge and practices in the field of early childhood and explores issues in early childhood.

CHD 240 Child Development Associate Preparation **3 Credits**

Meets requirements of the Council for Early Childhood Professional Recognition for academic preparation for the Child Development Associate credential. Provides students with the theoretical knowledge to support competent performance in a child care setting. Provides review of CDA competencies.

CHD 242 Curriculum Planning for Early Childhood Administrators **3 Credits**

Presents an overview of cognitive and creative curriculum from a developmentally appropriate prospective. Emphasizes planning and evaluating curriculum to meet comprehensive needs of the young child.

CHD 281-293 Special Topics in Child Development **1-5 Credits**

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

CIS 101 Introduction to Microcomputers **3 Credits**

Introduces the physical components and operations of microcomputers. Focuses on computer literacy and provides hands-on training in three areas of microcomputer application software: word processing, electronic spreadsheets and database management.

CIS 102 Data Processing Fundamentals **3 Credits**

Introduces data processing and programming with emphasis on hands-on computer experience. Examines the role of data processing in an organization,

including data processing applications, computer hardware and software, internal data representation, stored program concepts, systems and programming design, flowcharting and data communications. Reviews the history of computers, related computer careers, the social impact of computers and computer security.

CIS 104 Introduction to COBOL Programming 3 Credits

Provides an introduction to COBOL (Common Business Oriented Language) with major emphasis on developing structured programming skills. Develops proficiency in applying the programming development cycle to elementary business problems.

CIS 105 Operating Systems 3 Credits

Studies computer operating systems, purposes, structure and various functions. Provides general understanding of how comprehensive sets of language translators and service programs, operating under supervisory coordination of an integrated control program, form the total operating systems of a computer.

CIS 106 Microcomputer Operating System 3 Credits

Introduces the organization, structure and functions of an operating system for a microcomputer. Presents the student with operating system concepts such as commands, error messages, interrupts, function calls, device drivers, structure, files and organization. Incorporates concepts into practical applications.

CIS 107 Microcomputer Programming 3 Credits

Introduces a structured microcomputer language. Concepts in input/output commands, arithmetic expressions, conditional control, iteration techniques and subroutines will be stressed. Concepts will be incorporated into the application of solving business problems.

CIS 108 Practical Computer Operations 3 Credits

Demonstrates workstation and minicomputer operations including peripheral devices. Provides information on data processing area, including job responsibilities, standards and run manuals, message control functions, documentation and back-up procedures.

CIS 109 UNIX Operating System 3 Credits

Studies the UNIX V Operating System and its use as a time-sharing operating system. Includes basic UNIX commands, use of the visual editor, the UNIX directory structure and file management with SHELL commands. Offers opportunities to apply skills and knowledge in a laboratory environment.

Course Descriptions

CIS 110 Basic Programming Language 3 Credits

Introduces concepts of program design and programming using the BASIC programming language, the primary language for use with microcomputers. Includes overview of basic arithmetic operations, accumulating and printing totals, comparing, array processing and interactive programming. Offers students an opportunity to apply skills in a laboratory environment.

CIS 113 Logic, Design, and Programming 3 Credits

Introduces the structured techniques necessary for efficient solution of business-related computer programming logic problems and coding solutions into a high-level language. Includes program flowcharting, pseudocoding and hierarchy charts as a means of solving these problems. Covers creating file layouts, print charts, program narratives, user documentation and system flowcharts for business problems. Reviews algorithm development, flowcharting, input/output techniques, looping, modules, selection structures, file handling and control breaks. Offers students an opportunity to apply skills in a laboratory environment.

CIS 115 Electronic Spreadsheets in Business 3 Credits

Provides conceptual and hands-on instruction in the use of spreadsheet software including worksheet, graphics and database operations with applications to the solution of business problems.

CIS 201 Database Design & Management 3 Credits

Introduces program applications in a database environment and includes discussion of data structures; indexed and direct file organizations; data models, including hierarchical, network, and relational; storage devices, data administration and analysis; design and implementation. Allows students to use database software in creating, modifying, retrieving and reporting from databases. Develops business application using a database language.

CIS 202 Data Communications 3 Credits

Introduces concepts of data communications for computer programming students to build a foundation of knowledge upon which to add new technologies.

CIS 203 Systems Analysis and Design 3 Credits

Provides instruction for creating or modifying a system by gathering details, analyzing data, designing systems to provide solutions and implementing and maintaining the systems.

CIS 204 Advanced COBOL Programming 3 Credits

Continues topics introduced in Introduction to COBOL with more logically complex business problems. Develops a higher level of COBOL proficiency,

as well as greater familiarity with debugging techniques. Uses the structured approach through class instruction and laboratory experience.

CIS 205 Database Design 3 Credits

Introduces program applications in a database environment with emphasis on loading, modifying and querying the database by means of a host language (COBOL). Discusses data structures, indexed and direct file organizations, models of data, including hierarchical, network and relational, storage devices, data administration and analysis, design and implementation.

CIS 206 Systems Development with High-Level Tools 3 Credits

Analyzes established and evolving methodologies for the development of business-oriented computer information systems. Develops competencies in techniques that apply modern software tools to generate applications directly, without requiring detailed and highly technical program writing efforts.

CIS 207 Microcomputer Database Management Systems 3 Credits

Presents an overview of relational, hierarchical and network database models with emphasis on microcomputer relational database management systems (DBMS). Provides practical experience in using database software to create, modify, retrieve and report. Develops business applications using the database language.

CIS 208 Electronic Spreadsheets 3 Credits

Presents an in-depth study of an electronic spreadsheet. Focuses on business applications using menu commands, formulas, functions, macro commands, graphs, printing, database and file operations.

CIS 209 Computer Business Applications 3 Credits

Requires students to apply business, microcomputer and communication skills within business applications. Emphasizes application of several forms of computerized information processing including data processing, word processing, spreadsheets, graphics and communications. Analyzes the effects of automation on the office worker, management and the work environment and requires written and oral presentations.

CIS 210 COBOL III 3 Credits

Emphasizes file handling techniques on tape and direct access devices and the use of libraries via the COBOL CALL and COPY verbs. Introduces variant forms of the structured approach and unstructured concepts such as the GO TO verb. Helps students develop good programming practices and an entry-level COBOL competency.

Course Descriptions

CIS 211 RPG Programming Fundamentals 3 Credits

Provides a general introduction to the RPG programming language with emphasis on hands-on programming experience. Presents the most important features of the RPG language from input/output processing to applications requiring handling. Introduces language concepts in class lecture. Includes programming lab assignments.

CIS 212 "C" Programming 3 Credits

Provides a basic understanding of the fundamental concepts involved when using a low development language. Emphasizes one logical program design using a modular approach involving task-oriented program functions. Discusses the role of data types, storage classes and addressable memory locations.

CIS 213 Assembler Language Program 3 Credits

Gives students a basic understanding of the assembler process using IBM mainframe computers. Stresses the importance of byte-wise manipulation of data fields when using low-level languages. Emphasizes the actual workings of a computer during the execution of a computer program. Discusses the role of data types, EBCDIC format of data storage and addressable memory locations.

CIS 214 Pascal Programming 3 Credits

Provides a basic understanding of the structured programming process necessary for successful Pascal programming. Emphasizes top down program design and modularity, using Pascal procedures, functions and independent subprograms. Discusses simple and advanced data types and program control aids, algorithm development and program debugging. Provides students with a fundamental understanding of good programming technique and a basic knowledge of Pascal syntax and structure.

CIS 215 Field Study 4 Credits

Provides opportunity for a field project or research case study within the computer technology field. Includes collection and analysis of data and/or actual work experience in business or industry.

CIS 216 Advanced RPG Programming 3 Credits

Offers advanced study in the use of the RPG compiler language in solving business problems. Focuses on file processing methods and a working knowledge of advanced features and techniques through laboratory experience.

CIS 220 Shell Command Language 3 Credits

Teaches students how to write, test and debug shell procedures on a computer utilizing a UNIX operating system. Presents the shell and how it works, shell processes, variables, keyword and positional parameters, control constructs, special substitutions, pipelines, debugging aids, error/interrupt processing and shell command line. Offers students the opportunity to apply skills in a laboratory environment

CIS 221 Advanced "C" Programming 3 Credits

Continues those topics introduced in "C" Language Programming with emphasis on array processing, file processing and advanced debugging techniques. Provides the opportunity to apply skills in a laboratory environment.

CIS 222 Office Automation 3 Credits

Presents a perspective on the needs, potentials and urgencies of systems to support modern office functions. Concentrates on structured analysis and design of hardware/software systems for creating, maintaining, printing and communicating data files utilizing text processing systems. Covers methodologies for creating procedures to produce letters and reports from data files. Incorporates concepts and techniques into practical applications.

CIS 223 Integrated Business Software 3 Credits

Presents knowledge of integrated microcomputer software concepts. Students design a complete business system utilizing all parts of an integrated microcomputer software package which can share the same data and manipulate it. Includes use of word processing, electronic spreadsheets, graphics, databases and command language.

CIS 224 Hardware and Software Troubleshooting 3 Credits

Presents an in-depth analysis of the components of a computer system and their relationship to each other. Includes concepts of parallel and serial connectivity, installation and maintenance of software, peripheral devices, interface cards and device drivers. Analyzes realistic hardware/software problems encountered in the workplace and techniques and procedures used to implement solutions.

CIS 225 Advanced Database Management Systems 3 Credits

Continues CIS 207 Microcomputer Database Management Systems. Emphasizes the development of advanced applications in database management.

CIS 226 Advanced Electronic Spreadsheets 3 Credits

Continues CIS 208 Electronic Spreadsheets. Emphasizes the advanced application of electronic spreadsheets.

Course Descriptions

CIS 227 Topics in Information Management 3 Credits

Discusses topics of current interest in information management. Focuses on special interest projects. Utilizes field trips, guest speakers, audio-visual activities and seminars.

CIS 228 Cooperative Education 1-9 Credits

Provides students with the opportunity to apply concepts learned in the classroom to actual work situations. Requires program advisor approval.

CIS 229 Seminar I 1 Credit

Discusses topics of current interest in computerized information management with an emphasis on the application of information management skills during lab time. Various seminar topics may be identified and offered each term under this course number.

CIS 230 Seminar II 2 Credits

Discusses topics of current interest in computerized information management with emphasis on application of information management skills during lab time. Identifies and offers various seminar topics each term under this course number.

CIS 232 Visual Basic Programming 3 Credits

Provides a basic understanding of fundamental concepts involved when using a member of a Windows programming development language. Emphasizes logical program design using a modular approach involving task-oriented program functions. Allows the design of a Windows user interface constructed in an erector-set-like fashion. Builds an application by selecting forms-and controls, assigning properties and writing code.

CIS 233 Graphic User Interfaces: Windows 3 Credits

Provides a foundation of fundamental concepts in the use of Windows-type software. Explores the Windows operating system, accessories and various applications. Develops a proficiency with Windows operations including customizing the environment, integrating applications and managing files.

CIS 234 XBase Programming Language 3 Credits

Provides a basic understanding of the fundamental concepts involved when using a high-level development database language. Emphasizes logical program design using a modular approach. Provides a sound foundation of fundamental concepts, such as the XBase functions.

CIS 235 Local Area Networks 3 Credits

Studies local area networks, their topologies and functions. Provides a general understanding of the basic LAN protocols. Covers utilization of application software using a local area network to share resources among network members, transferring files between users, set-up and administration of a network, identification of hardware and software needs and LAN to mainframe connectivity.

CIS 240 Introduction to Computer Integrated Manufacturing 3 Credits

Includes the study of all major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Includes the planning of a project which will be formally documented and presented by the students and implemented in CIS 241.

CIS 241 Computer-Integrated Manufacturing Project 3 Credits

Covers the major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Covers advanced CIM applications and includes the implementation of a project in a realistic CIM environment.

CIS 280 Co-op/Internship 1-6 Credits

Provides students with the opportunity to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

CIS 281-293 Special Topics in Computer Information Systems 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

CON 101 Introduction to Construction Technology 3 Credits

Presents history of building construction to present-day applications emphasizing future trends and construction as a career. Provides practice in the operation, maintenance and safety of various tools including the builder's level and transit.

CON 106 Construction Blueprint Reading I 3 Credits

Provides instruction and practice in the use of working drawings and applications from the print to the work. Includes relationship of views and details, interpretation of dimension, transposing scale, tolerance, electrical symbols, sections, materials list, architectural plans, room schedules and plot plans.

Course Descriptions

CON 204 Estimating and Specifications	3 Credits
Presents the student with the estimating process for residential construction. Emphasizes reading blueprints and specifications, estimating labor, materials take-off and pricing.	
CON 281-293 Special Topics in Construction Technology 1-5 Credits	
Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.	
CTR 114 ON/OFF/Institutional Catering 2 Credits	
Provides an overview of the catering styles/types that exist. Covers techniques of production, service and showmanship.	
CTR 214 Catering Administration 3 Credits	
Teaches the correct procedures in event bookings, contracts, recordkeeping and event follow-up. Covers fringe services development, human resource issues and cost control techniques.	
CUL 105 Institutional Food Service 2 Credits	
Introduces students to the variety of institutional food service facilities. Includes converting recipes for quantity food production, calculating per portion cost and determining profitable selling price.	
CUL 110 Meat Cutting 2 Credits	
Introduces meat cutting. The student will gain knowledge in the breakdown of beef, pork, poultry, lamb and veal.	
CUL 202 Specialized Cuisine 3 Credits	
Introduces students to foods from various cultures. Provides a background in the history of foods from various countries and develops food preparation skills. Covers table service and table side food preparation.	
CUL 204 Classical Pastries 3 Credits	
Familiarizes students with Classic French, Italian and European desserts. Discusses names and terminology of desserts. Includes the preparation of goods such as puff pastry, specialty cookies, ganache, parlimosa creams and fillings and specialty sauces. Emphasizes size, consistency, presentation, eye appeal and taste of pastries.	
CUL 206 Externship 3 Credits	
Offers students practical work experience in their chosen area of specialization.	

an acceptable hospitality establishment. Emphasizes skills at the dishwasher, prep-cook, station cook and beginning management levels.

CUL 211 Classical Cuisine **3 Credits**

Presents advanced and sophisticated classical culinary methods following the principles and techniques of Escoffier. Studies cooking techniques, timing, presentation, history and terms pertaining to classical foods and menus, with emphasis on French cuisines. Provides practical experience in table service operation, kitchen coordination and timing.

CUL 212 Fish and Seafood **2 Credits**

Discusses the importance of fish and seafood in today's market. Includes types and categories of American and imported fish and shell fish, and proper buying, storage, preparation and merchandising of fish and seafood. Provides experience in boning, cutting and cooking methods appropriate for seafood.

DCT 101 Basic Drafting **3 Credits**

Introduces basic mechanical drafting techniques.

DCT 104 Product Drafting **3 Credits**

Introduces the set concept of working drawings both in detailing and assembly. Presents fastening devices, thread symbols and nomenclature, surface texture symbols, classes of fits, and the use of parts lists, titles and revision blocks. Introduces the basics of product design and the design process.

DCT 105 Facilities Design and Layout **3 Credits**

Focuses on the architectural drawings of commercial or industrial buildings. Covers problems of space planning, design, materials, HVAC systems and construction methods. Develops working drawings and presentation drawings. Requires oral presentations and discussions. Requires students to complete research on a limited number of construction materials and methods.

DCT 107 Advanced CAD **3 Credits**

Instructs students in fundamentals of 3-D modeling for design. Includes overview of modeling, types, graphic manipulation, part structuring, coordinate systems and developing strategy of model geometry.

DCT 108 Residential Drafting **3 Credits**

Covers residential planning and drafting. Includes interior planning, structural design and development of working drawings. Provides opportunity for students to design a residence using accepted building standards from information given in class.

Course Descriptions

DCT 109 Construction Materials and Specifications 3 Credits

Introduces various construction materials, composition and application.

Studies specifications of materials, construction contracts and applications required in the building industry.

DCT 110 Architectural Rendering 3 Credits

Presents a survey and history of pictorial drawings. Studies light and color, rendering media and application of different techniques and media through a series of exercises.

DCT 113 Intermediate CAD 3 Credits

Continues study of CAD fundamentals. Focuses on advanced CAD features and various methods of customizing CAD systems.

DCT 201 Schematic Drafting 3 Credits

Presents the systematic layout of various types of schematic drawing done by a drafts person. Requires students to prepare finished drawings for manufacture or installation of plumbing, heating, electrical, electronic and fluid-power type drawing.

DCT 202 CAD Programming Language 3 Credits

Covers use of computer language to program commands for CAD.

DCT 204 Architectural CAD 3 Credits

Presents advanced computer-aided design topics, including architectural design. Includes all necessary drawings needed for the construction process.

DCT 205 Introduction to Plastics 3 Credits

Introduces students to the major plastic processing industries, techniques and most widely used plastic polymers, their applications and properties.

DCT 206 Mechanical and Electrical Equipment 3 Credits

Focuses on mechanical and electrical requirements for a structure. Studies electrical load calculations, wire sizing and circuits. Calculates plumbing requirements, fixture units and pipe sizing. Includes heating systems, duct layout and sizing.

DCT 207 Die Design Drafting 3 Credits

Studies the drafting, detailing and design of blanking, piercing and forming dies. Covers material reaction to shear, cutting clearances and nest gauging.

DCT 208 Structural Detailing 3 Credits

Focuses on detailing commercial structural members, their connections, materials and methods of construction. Concentrates on traditional materials, such as reinforced concrete, masonry, steel and timber.

DCT 209 Estimating/CAD 3 Credits

Introduces estimating procedures used in the building industry. Studies material takeoffs, estimating overhead expenses, contingencies, labor and equipment. Involves the use of computers to generate takeoffs and to set pricing.

DCT 210 Surveying I 3 Credits

Introduces surveying equipment, procedures for performing measurements, turning angles, determining grades and other field applications. Covers surveying techniques and computations using the level, chain and transit in calculating areas, lines and grades.

DCT 211 Commercial Structures I 3 Credits

Focuses on planning and drawing commercial structures. Uses a presentation drawing and working drawing for concrete structures and steel structures.

DCT 212 Commercial Structures II 3 Credits

Focuses on planning and drawing commercial structures. Uses working drawings for pre-engineered and concrete/steel structures.

DCT 213 CAD Mapping 3 Credits

Covers the concepts of map making with computer-aided drafting and typical drafting media found in the industry. Studies civil engineering applications of mapping procedures including profiles, topography and site plans.

DCT 214 Machine Design 3 Credits

Presents practical solutions to mechanical design problems. Studies the design of machine elements including shafts, bearings, keys, pins and springs. Includes the geometry and drafting of cams and gears and the study of linkages.

DCT 215 Electronic Drafting/CAD 3 Credits

Introduces students to electronic schematics, drill indexing and printed circuit board design. Emphasizes the creation and manipulation of basic symbols, connection diagrams, block and logic diagrams, including the use of figure parts and data extract.

Course Descriptions

DCT 216 Jig and Fixture Design	3 Credits
Introduces the processes of drafting and design as applied to tooling. Emphasizes tooling, locators, supports, holding devices, clearances and design as it pertains to jig and fixtures.	
DCT 217 Product Design	3 Credits
Provides the student an opportunity to apply all previously acquired knowledge in product drafting to the design of a new or existing consumer product. Considers the function, esthetics, cost economics and marketability of the product. Requires a research paper and product illustration.	
DCT 218 CAD/CAM Design	3 Credits
Covers the development of various machine routines. Studies the control of the CNC mill and lathe. Includes material handling and robotics.	
DCT 227 Geometric Dimensioning and Tolerancing	3 Credits
Introduces the fundamental principles of geometric dimensioning and tolerancing according to the latest ANSI standards. Applies geometric dimensioning and tolerancing symbols along with tolerances of form, profile, orientation, run-out and location.	
DCT 228 Civil I	3 Credits
Explores the engineering field. Presents an overview of infrastructure design, including the study of roadways and drainage systems. Emphasizes site development and highway planning.	
DCT 229 Civil II	3 Credits
Presents construction management techniques, including scheduling and contracts. Studies soil properties and paving methods. Examines practical construction considerations.	
DCT 230 Computer Rendering and Animation	3 Credits
Instructs students in fundamentals of computer generalized renderings and animations using 3D Studio software and its components.	
DCT 240 Introduction to Computer Integrated Manufacturing	3 Credits
Includes the study of all major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Includes the planning of a project which will be formally documented and presented by students and implemented in DCT 241.	

DCT 241 Computer-Integrated Manufacturing Project 3 Credits

Covers the major components of computer-integrated manufacturing (business, engineering and shop floor) as an integrated whole. Covers advanced CIM applications and includes the implementation of a project in a realistic CIM environment.

DEN 102 Dental Materials and Lab I 3 Credits

Reviews properties of dental materials, proper modes of manipulation, necessary aramentarium used and technical duties which dental assistants perform. Stresses clinical behavior of materials and biological factors of importance to dental assistants.

DEN 103 Dental Anatomy 3 Credits

Focuses on oral, head and neck anatomy, basic embryology, histology, tooth morphology and charting dental surfaces related to the dental field. Includes dental anomalies, pathological conditions and terminology relevant to effective communication. Includes drawing and carving of teeth.

DEN 108 Preventive Dentistry/Diet and Nutrition 3 Credits

Emphasizes importance of preventive dentistry and effects of diet and nutrition on dental health. Presents techniques of assisting patients in the maintenance of good oral hygiene.

DEN 115 Preclinical Practice 4 Credits

Introduces qualifications and legal-ethical requirements of the dental assistant. History and professional organizations are surveyed. Emphasizes clinical environment and responsibilities, chair-side assisting, equipment and instrument identification, tray setups, sterilization, characteristics of microorganisms and disease control.

DEN 116 Dental Emergencies/Pharmacology 2 Credits

Surveys the most commonly utilized and required first aid measures for emergencies. Examines proper techniques and procedures as well as equipment, medications and position care of the patient. Reviews anatomy/physiology and cardiopulmonary rescue as provided by the American Heart Association.

DEN 117 Dental Office Management 2 Credits

Principles of administrative planning, bookkeeping, filing, recall programs, banking, tax records, computer software, insurance, office practice and management as related to the dental office. Attention is given to techniques of appointment control, record keeping, and credit and payment plans.

Course Descriptions

DEN 118	Dental Radiography	4 Credits
Principles, benefits, effects and control of X-ray production. Covers history, radiation sources, modern dental radiographic equipment and techniques, anatomical landmarks, dental films and processing. Emphasizes avoidance of errors while exposing and processing dental radiographs.		
DEN 119	Dental Materials and Lab II	2 Credits
Continues Dental Materials and Laboratory 1.		
DEN 120	Preclinical/Clinical Practicum	4 Credits
A continuation of Preclinical Practice I. The following dental specialties are presented: Oral & Maxillofacial Surgery, Periodontics, Endodontics, Pediatric Dentistry, Orthodontics, Prosthodontics, and Dental Public Health. Chair-side skills are applied in a clinical office situation on live patients.		
DEN 121	Clinical Practicum	7 Credits
A clinical learning experience that provides increased practical chair-side dental assisting experience to be gained from community service and private dental practices in general and specialty areas of dentistry. Opportunity for increased skill development in clinical support and business office procedures also provided. Weekly seminars are included as an integral part of the learning experience.		
DEN 131	Basic Integrated Science	2 Credits
Examines the human body as an integrated unit. Includes anatomy, physiology and medical terminology.		
DSN 103	CAD Fundamentals	3 Credits
Introduces fundamentals of CAD (Computer-Aided Drafting). Includes overview of CAD and systems, use of software and plotter applications. Each student will complete an individual project by the end of the semester.		
DSN 106	Descriptive Geometry	3 Credits
Introduces fundamental principles in developing graphical solutions to engineering problems. Covers true length, piercing points on a plane, line intersections, true shapes, revolutions and developments using successive auxiliary views.		
DSN 220	Advanced CAD	3 Credits
Focuses on advanced CAD features, including fundamentals of three-dimensional modeling for design. Includes overview of modeling, graphic manipulation, part structuring, coordinate system and developing strategy of model geometry.		

DSN 221 Statics**3 Credits**

Studies applied mechanics dealing with bodies at rest. Covers units, vectors, forces, equilibrium, moments and couples, planar force systems, distributed forces, analysis of structures (trusses and frames) and friction.

DSN 222 Strength of Materials**3 Credits**

Studies internal stresses and physical deformations caused by externally applied loads to structural members. Covers stress and strain, shear stress, properties of areas, shearing force and bending moment, deformation of beams, columns and combined stresses. Teaches various materials' physical and mechanical properties.

DSN 281-293 Special Topics in Design Technology**1-5 Credits**

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

ELT 100 Circuits I**4 Credits**

Introduces the basics of electricity and electronics. Covers DC circuits. Uses lab work to stress the use of test equipment. Discusses resistance, magnetism, series circuits, parallel circuits, Ohm's Law, Kirchhoff's Laws and circuit analysis (superposition, Thevenin, etc.).

ELT 101 Circuits II**4 Credits**

Studies electrical principles and laws pertaining to alternating current and voltage. Covers AC network theorems, operator, phasors, reactances, impedances, phase relationships, power, resonance, transformers, polyphase and filter circuits.

ELT 102 Circuits Lab**2 Credits**

Uses laboratory experiences to enhance and confirm the theories and practices discussed in Circuits I. Provides hands-on training in the use of shop test equipment. Presents troubleshooting skills and care of equipment relevant to electronics.

ELT 103 Digital Principles**3 Credits**

Introduces digital electronics, including logic gates and combinational logic circuits. Studies binary arithmetic, Boolean algebra, mapping techniques, digital encoders and decoders, multiplexers and demultiplexers and arithmetic circuits. Uses SSI and MSI digital integrated circuits.

Course Descriptions

ELT 105 Solid State I**4 Credits**

Studies characteristics and applications of semiconductor devices and circuits. Covers signal and rectifying diodes, bipolar transistors, rectification, single and multistage amplifiers, AC/DC load lines, biasing techniques, equivalent circuits and power amplifiers.

ELT 106 Digital Applications**4 Credits**

Offers advanced study of digital systems, including memory and D/A and A/D conversion. Covers construction of specified timing circuits, design driver/display systems, selected register design, counters and arithmetic circuits and validation of operation. Studies hardware and general microprocessor system organization.

ELT 107 Industrial Electronics**4 Credits**

Presents overview of electronics in the industrial setting. Instructs students in how electronics is applied to industrial systems. Introduces power machines, polyphase systems, solid state controls, transducers and industrial computer systems.

ELT 110 Fiber Optics**3 Credits**

Presents overview of fiber optics. Studies uses for fiber optics, advantages, cable details, connectors, splices, sources, detectors and fiber optic systems.

ELT 111 Satellite Communications**3 Credits**

Presents theory of satellite operations, site perimeters for and methods of site preparation and installation of satellite dish. Aids in making a decision as to which type of dish to use for a particular installation.

ELT 115 Introduction to Lasers**3 Credits**

Introduces laser action, laser beam characteristics, types of lasers, safety considerations, general laser applications and laser and optical equipment. Teaches basics of laser, laser systems and prepares beginning laser students for future courses.

ELT 116 Laser and Optical Measurements**3 Credits**

Examines the instrumentation available for evaluating the characteristics of laser light. Includes introduction to radiometry/photometry and typical energy/power detectors. Discusses photographic recording mediums and import optical measuring instruments (spectrometers, monochromators, interferometers and spectrophotometers). Stresses hands-on experience with current optical equipment used in measurement and analysis of CW and pulsed laser beams.

ELT 201 Solid State II **4 Credits**

Studies applications of special-purpose diodes, thyristors and unipolar transistors. Discusses frequency effects and response of amplifiers. Includes discreet SCRs, UJTs, FETs, oscillators, linear regulated power supplies, switching regulators and power amplifiers. Introduces op-amps.

ELT 202 Microprocessors **4 Credits**

Introduces microprocessor system organization, operation, design, troubleshooting and programming. Investigates and analyzes a microprocessor instruction set for its operation. Includes programming and interfacing a microprocessor.

ELT 203 Introduction to Industrial Controls **3 Credits**

Studies basics of controls related to industrial electronics. Includes basic and pilot control devices such as circuit layouts, industrial schematics, reduced voltage starters and multi-speed controllers. Covers transformer hook-ups and circuit protection.

ELT 204 Linear Integrated Circuits **3 Credits**

Introduces operational amplifiers (op-amps), characteristics and operations. Includes op-amp active filters, amplifiers, regulators, comparators, timers, oscillators and phase-locked loops.

ELT 206 Analog Troubleshooting Techniques **3 Credits**

Studies techniques for logical troubleshooting of electronic circuits and simple systems with emphasis on systematic diagnostic methods, signal tracing and signal injection methods. Provides experience in use of test equipment and electronic communication skills.

ELT 207 Digital Troubleshooting Techniques **3 Credits**

Offers advanced study of digital systems, including memory and D/A and A/D conversion. Covers construction of specified timing, circuits and design driver/display systems, design of selected register, counters and arithmetic circuits and validation of operation. Studies hardware and general microprocessor system organization.

ELT 210 VCR Theory **3 Credits**

Studies video cassette recorder theory with VDR troubleshooting techniques and VCR test equipment usage. Provides instruction in diagnostic testing through signal injection and signal tracing, emphasizing recording, playback and servo circuits. Provides students with quantitative and qualitative knowledge of the fundamental principles and terms used in VCR theory and repair.

Course Descriptions

ELT 211 Wave Optics and Components 3 Credits

Treats the wave nature of light as manifested in interference, diffraction and polarization phenomena in optical systems. Analyzes and uses optical components that modify, control or detect light. Includes discussion of light source, wave nature of light interference, diffraction, polarization, holography, beam splitters, filters, isolators, gratings, polarizers and non-linear optical materials. Stresses hands-on experience in application/evaluation of wave optic devices in typical optical systems.

ELT 212 Networking 3 Credits

Studies types of protocol used in data communication systems. Includes an overview of networking, networking control and interfacing. Emphasizes protocols, packet switching systems and local area networks.

ELT 214 Industrial Instrumentation 3 Credits

Emphasizes precision measurement via pressure, strain, force, flow and level gauges. Covers the related probes, sensors, transducers, computer interfaces, computer hardware and peripherals and computer software necessary for the acquisition, summarization, analysis and presentation of data.

ELT 215 Laser Systems and Applications 3 Credits

Provides an in-depth coverage of laser types and applications. Focuses on ion, molecular, liquid, solid state and semi-conductor lasers with specific attention given to Nd:YAG, Ruby, CO₂ and gallium arsenide. Discusses flash lamps, power supplies (CW and pulsed) and energy transfer mechanisms for each laser type. Examines other parts of laser systems, including electro-optic and acousto-optic modulators, Q-switching, mode locking, and mechanical and bleachable dye methods. Includes a description of lasers in medicine, surgery, dentistry, communications, range finding, alignment tracking, welding cutting, drilling, data recording and display. Stresses hands-on operation and trouble shooting of each laser type and small scale examples of applications.

ELT 216 Laser and Optical Measurements 3 Credits

Examines the instruments and methods available for evaluating laser light and supporting optical equipment. Includes an introduction to radiometry/photometry and typical energy/power detectors. Covers photographic recording mediums and important optical measuring instruments and methods. Stresses hands-on experience with current optical measuring equipment and methods.

ELT 217 Laser Projects 3 Credits

Provides students with an opportunity to work on individual projects directly with the instructor to build laser related project(s).

ELT 218 Geometrical Optics 3 Credits

Applies mathematical and graphical techniques to the reflection/refraction of light at typical optical surfaces. Analyzes and uses typical optical components. Includes discussion of ray tracing, imaging with lenses, F-stops and apertures, mirror, lenses, prisms, windows, optical flats, matric optics, etalons, beam expanders, collimators and autocollimators, optical tables, optical supports, optical systems and photographic components.

ELT 219 Biomedical Electronics I 3 Credits

Offers further study of medical electronics equipment, including ECG, EEG, defibrillators, heart monitors and other monitoring and respiratory equipment.

ELT 220 Biomedical Electronics II 3 Credits

Studies medical support systems including x-ray equipment, respiration and analyzers and their maintenance. Studies medical ultra-sound, electrosurgery units and mechanical recorders. Prepares students for licensing and certification.

ELT 223 Electrical Machines 3 Credits

Provides an overview of electrical machines and how they relate to industrial electronics. Gives industrial electronics technicians insight into electrical power generation, polyphase system, transformers, all types of electrical motors, power factor and power factor correction, back-up power and electrical power monitoring.

ELT 226 Computer Troubleshooting 3 Credits

Studies techniques for logical troubleshooting of microcomputers. Emphasizes system-oriented troubleshooting procedures.

ELT 227 Peripherals 3 Credits

Studies peripherals commonly used with computers and microcomputers interfacing with these peripherals. Includes a study of data communications hardware and techniques. Studies the design of circuits to interface microprocessors with industrial equipment. Includes microcomputer systems interfacing with input and output transducers for control systems. Studies techniques for logical troubleshooting of microcomputer systems.

ELT 228 Communications Electronics 3 Credits

Analyzes communication circuits with emphasis on AM, FM, SSB and stereo transmitter and receiver systems. Includes noise modulation and demodulation principles, phase-locked loop, RF amplifiers, automatic gain control, detectors, limiters and discriminators. Offers hands-on lab exposure to analog circuits utilizing analysis and troubleshooting techniques.

Course Descriptions

ELT 229 Telecommunications	3 Credits
Examines various methods in transmitting digital data from one location to another. Covers time and frequency division multiplexing. Includes pulse-code and delta modulation, telemetry, error detection and correction and simple networks. Covers techniques for logical troubleshooting of telephonic systems.	
ELT 230 Advanced Communications Electronics	3 Credits
Introduces antenna principles and wave propagation and an in-depth study of matching techniques for transmission lines. Includes the Smith Chart and a thorough study of television operation. Measures radiation patterns with different antenna arrays. Practices digital and analog troubleshooting techniques.	
ELT 231 Microwave Communications	3 Credits
Studies microwave transmission lines, waveguides, waveguide components, including hybrid couplers, attenuators, microwave filters, phase shifters, T-junctions, irises and microwave tubes.	
ELT 235 Process Control	3 Credits
Covers theory and applications of process control including the principles of PID, feedback, open loop and closed loop systems and typical process control applications.	
ELT 237 Calibrations	3 Credits
Provides training in dismantling and calibration of instruments (electronic and pneumatic) found in industry, including DP cells, pH and oxygen analyzers, valve positioners, thermocouple circuits and controllers and control valves.	
ELT 240 Optics	3 Credits
Discusses principles of optics emphasizing geometrical and physical optics. Includes interference, reflection, refraction, polarization, diffraction and birefringence. Discusses devices used in experiments including lenses, diffraction grating, polarization filters, prisms, mirrors and etalons.	
ELT 242 FCC License Preparation	3 Credits
Provides an in-depth review of the topics covered in the test for an Federal Communications Commission (FCC) license. Emphasizes DC and AC electronics, solid state electronics, test and measurement instruments, communications principles and FCC rules and regulations.	

ELT 280 Co-op/Internship 1-6 Credits

Provides students the opportunity to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

ELT 281-293 Special Topics in Electronics Technology 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

ENV 101 Introduction to Environmental Systems 3 Credits

Provides students with an overview of pollution problems involving water, air, solid waste, radiation, population and noise. Discusses current national and international problems and concerns.

ENV 102 Environmental Administration 3 Credits

Introduces the political process of environmental law.

ENV 103 Environmental Chemistry I 3 Credits

Provides hands-on laboratory training in the application of EPA and state-required permit parameters to determine facility compliance. Reviews sampling techniques and preservation methods and basic statistical quality control analysis.

ENV 104 Plant Operations—Sanitary 3 Credits

Provides the basic principles of aerobic and anaerobic biological treatment processes, including activated sludge, trickling filters, lagoons, sludge handling and disinfection. Reviews state and federal regulations related to wastewater plants.

ENV 105 Air Pollution Control I 3 Credits

Focuses on understanding air pollution sources, effects and treatment technologies.

ENV 106 Water Treatment 3 Credits

Introduces the basic treatment processes of water supplies including coagulation, sedimentation, filtration, chemical dosage, taste and odor control.

ENV 107 Applied Research I 3 Credits

Requires completion of a special project or case study specifically related to the occupational area. Serves as a field project within the framework of actual working experience in business or industry or a research case study including data collection and data analysis.

Course Descriptions

- ENV 108 Engineering Properties of Earth Materials** **3 Credits**
Emphasizes the influences of soils and geologic structures on ground water flow and facility site selection.
- ENV 109 Water Supply** **3 Credits**
Covers the elementary engineering aspects of water supply and distribution and maintenance of collection systems.
- ENV 202 Applied Research II** **3 Credits**
Requires completion of a special project or case study specifically related to the occupational area. Serves as a field project within the framework of actual working experience in business or industry or a research case study including data collection and data analysis.
- ENV 203 Environmental Microbiology** **3 Credits**
Continues the study of micro-organisms with emphasis on water, wastewater and related public health and stream sanitation problems. Includes laboratory exercises on bacteriological techniques in the analysis of samples for numbers, types and effects of microbes in the degradation and/or rehabilitation of our air, food and water supplies.
- ENV 204 Basic Fluid Mechanics** **3 Credits**
Introduces the principles of flow measurement, metering in closed conduits, open channels, streams, storm run-off, pump characteristics and air flow.
- ENV 208 Plant Operations—Industrial** **3 Credits**
Covers wastewater treatment processes including coagulation, sedimentation, activated sludge, neutralization, equalization, cyanide and chromate removal. Presents instrumentation, maintenance and troubleshooting. Includes operations, laboratory testing and associated mathematics.
- ENV 212 Solids Handling and Disposal** **3 Credits**
Introduces the theory, equipment and operational procedures of a variety of sludge treatment and disposal techniques. Covers processes, equipment, process management and process control for sludge volume reduction, solids reduction, conditioning, stabilization and solids disposal.
- ENV 213 Air Pollution Control II** **3 Credits**
Provides an in-depth study of various air quality analysis and modeling techniques.
- ENV 214 Environmental Regulations** **3 Credits**
Surveys the major current environmental regulations.

ENV 215 Waste Disposal 3 Credits

Provides students with a basic understanding of solid and hazardous waste disposal problems.

ENV 216 Environmental Chemistry II 2 Credits

Studies the analysis of metals and organics. Includes the operation of atomic absorption, gas and liquid chromatography and mass spectrophotometers.

ENV 280 Co-op/Internship 1-6 Credits

Provides students the opportunity to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

FST 104 Food Production, Methods, and Procedures 3 Credits

Provides study of and application of food production methods and procedures with an emphasis on soups, sauces and gravies.

FST 105 Quality Service Standards 3 Credits

Provides students with techniques of serving, bussing and cashiering in dining operations.

FST 106 Application of Food Service Production I 3 Credits

Provides the knowledge and applications of the principles of pantry production, baking, vegetable and fruit preparation, pastries and breakfast cookery.

FST 108 Application of Food Service Production II 3 Credits

Provides knowledge and application of production methods and procedures for meat, seafood, poultry, dairy products and hot hors d'oeuvres.

FST 109 Computer Food Service Spreadsheets 3 Credits

Introduces microcomputers and specific food service applications. Covers basic procedures for food service spreadsheet applications involving analysis and reporting using Lotus 1-2-3 or compatible software.

GRA 102 Introduction to Machine Printing 3 Credits

Provides a history and overview of the interrelationships of processes, materials and techniques utilizing equipment and tools necessary in platemaking, bindery/finishing and offset press. Allows students to take assigned projects from design to bindery.

GRA 104 Art and Copy Preparation 3 Credits

Provides a foundation in design, typographic and communication concepts. Presents traditional techniques, as well as computer-aided technologies in the

Course Descriptions

consideration of color, format and use of visuals in illustration. Emphasizes problem solving with assignments executed through strip-up of the negative into a flat and proofing.

GRA 106 Introduction to Color Printing 3 Credits

Studies basic color theory, materials and methods used in reproduction processes. Covers techniques and materials with assignments utilizing different processes, including 4-color from pre-separated negatives, register and run. Includes inks and systems.

GRA 107 Composition Systems I 3 Credits

Covers use, operation and application of machine principles and mechanisms related to typesetting, laboratory projects in setting composition photographically and utilization and examination of various input systems.

GRA 108 Studio Photography I 3 Credits

Introduces basic studio procedure and lighting set-ups. Explores control of artificial light and creative compositional techniques through assigned exercises. Covers procedures in equipment handling, controlling lighting ratios and further contrast and printing techniques in the darkroom.

GRA 109 Color Methods in Photography I 3 Credits

Introduces students to color negative photographic materials with 35mm camera. Includes processing, printing and application of theories on color and perception.

GRA 110 Advertising Design 3 Credits

Covers newspaper and magazine ads, two- and full-color folders, brochures, calendars and point of purchase merchandising aids in a comprehensive form for national advertising.

GRA 201 Photomechanical Reproduction 3 Credits

Introduces image conversion in black and white and color theory. Examines photo chemistry, halftones, darkroom techniques and diffusion transfer.

GRA 202 Science of Color 3 Credits

Presents physical properties of light, and color and psychological aspects of color perception and relationships through creative exercises. Examines color theories of Itten, Munsell, Goethe, Chevreul and Albers.

GRA 203 Graphic Design 3 Credits

Analyzes and reviews basic theories of graphic layout and design and their underlying principles and processes. Includes alphabet design and design language, imposition, design steps, rough, thumbnail, comprehensive and final layout and preparation of dummy.

GRA 204 Designing with Type 3 Credits

Introduces typography, type classification, identification and selection. Includes copy fitting, mark-up systems, proofreading, and fundamentals of layout and design for print media.

GRA 205 Survey of Printing Processes 3 Credits

Presents topics not normally covered in other courses. Examines those types of printing businesses in local area, utilizing guest lecturers from these businesses. Local market is surveyed and students are responsible for a research project concerning local business with presentation of oral or written report.

GRA 207 Audiovisual Presentation 3 Credits

Teaches the use of design principles in 35mm color transparencies and fundamentals of studio production and editing. Requires each student to present a slide/tape production that conveys a concept through the effective combination of images, music and/or narration.

GRA 208 Studio Photography II 3 Credits

Concentrates on advertising photography, including fashion and product shots. Emphasizes advanced studio lighting techniques and medium-to-large format camera operation with special purpose films, high print quality and technical control.

GRA 209 Photography Fundamentals II 3 Credits

Introduces advanced printing techniques and the use of medium-format cameras and black and white films, flash illumination and special purpose films.

GRA 210 Portraiture 3 Credits

Examines approaches and methods in traditional and alternative portraiture in studio and on-location photography. Emphasizes creative approaches to commercial portraiture. Introduces special darkroom techniques for printing portraits.

GRA 211 Flexography 3 Credits

Includes study of high-speed roll-fed press operation. Emphasizes safety, set-up and register. Includes field trips to flexo-webb printing plants.

Course Descriptions =

GRA 213 Desktop Publishing	3 Credits
Covers computer techniques in pre-preparatory and preparatory composing procedures, including typesetting and typographic concepts. Emphasizes computer skills and output.	
GRA 214 Screen Printing	3 Credits
Explores screen construction and process reproduction methods. Includes paper, tusche, knife-cut and photographic stencils and printing media surfaces applications.	
GRA 215 Computer Graphics II	3 Credits
Provides an overview of computers and their creative potential in graphic design focusing on videotext graphics. Allows students to create and manipulate images using a keyboard and a graphics tablet.	
GRA 218 Troubleshooting and Maintenance	3 Credits
Includes upkeep, lubrication and techniques of spotting malfunctioning equipment and corrections of problems concerning paper feed, dampening and inking systems.	
GRA 219 Special Problems in Printing	3 Credits
Uses individual investigation, research, studies and/or surveys of selected problems to enable students to identify objectives, procedures, equipment and key checkpoints on selected projects. Includes color separation, plant management and quality control.	
GRA 224 Photojournalism	3 Credits
Requires students to photograph community events and human interest features to gain experience in free-lance contributions to local publications. Provides skills in fact gathering, editorial writing, story development and establishment of visual relationships in the photoessay. Focuses on contemporary photojournalism.	
GRA 225 Color Methods in Photography II	3 Credits
Advanced application of color film materials in studio and on-location photography. Study of contemporary color photography in periodicals. The fine-tuning of exposure and printing skills is emphasized.	
GRA 227 Sensitometry Fundamentals	3 Credits
Covers the fundamental operation, principles and equipment associated with reflection and transmission densitometer basics. Requires students to produce large format negatives in black and white and in color for the purpose of controlling densities through exposure and development.	

GRA 233 Special Problems in Photography 3 Credits

Provides opportunity for fourth semester majors to do individual, long-term projects in areas appropriate to their needs and interests. Includes weekly evaluation of progress by instructor and program advisor. Requires students to produce work for final portfolio. Prepares students to transfer to a baccalaureate program, if they wish.

GRA 234 Special Problems in Advertising 3 Credits

Covers advertising in the economy, broadcast regulations, advertising media, audience measurement and the future of cable and pay television.

HEA 101 Heating Fundamentals 3 Credits

Introduces fundamentals applicable to the heating phase of air conditioning. Includes types of units, parts, basic controls, functions and applications. Emphasizes practices, tools and meter uses, temperature measurement, heat flow, and tubing installation and connecting practices.

HEA 103 Refrigeration I 3 Credits

Introduces compression systems used in mechanical refrigeration, including the refrigeration cycle. Introduces safety procedures and proper uses of tools used to install and service refrigeration equipment.

HEA 104 Heating Service 3 Credits

Covers procedures used to analyze mechanical and electrical problems encountered when servicing heating systems, including gas, oil, electric and hydronic heating equipment. Considers electrical schematic and diagrams, combustion testing, venting and combustion air requirements, installation and service procedures.

HEA 106 Refrigeration II 3 Credits

Continues Refrigeration I with further study of compressors, metering devices and an introduction to troubleshooting procedures. Includes clean-up procedures following compressor burn-out and analysis of how a single problem affects the rest of the system.

HEA 107 Duct Fabrication & Installation 3 Credits

Emphasizes reading blueprints common to the sheet metal trade, floor plans, elevations, section, detail and mechanical plans. Requires students to develop a layout of an air conditioning system, layout of duct work and fittings and fabrication of these parts, including proper use of hand-tools and shop equipment used to fabricate duct work and fittings.

Course Descriptions

- HEA 201 Cooling Service** 3 Credits
Covers procedures used to diagnose electrical control problems found in residential air conditioning and refrigeration systems, including 24-volt and line voltage controls such as defrost timers, defrost heaters, relays and cold controls with emphasis on schematic and pictorial diagrams.
- HEA 202 Electrical Circuits & Controls** 3 Credits
Studies various kinds of heating, air conditioning and refrigeration controls. Includes gas, oil, cooling and electric heat controls, thermostats and other kinds of variable controls such as humidistats, aquastats and electronic thermostats and temperature controls. Covers operation of controls and how they are integrated into complex systems by using schematic and pictorial diagrams. Presents component troubleshooting and testing.
- HEA 203 Heat Loss and Gain Calculation** 3 Credits
Covers methods used in calculating building envelop heat loss and heat gain in sizing units for residential and light commercial application. Discusses building construction techniques and energy consumption reduction methods.
- HEA 204 Commercial Refrigeration** 3 Credits
Examines air conditioning and refrigeration systems for commercial use, including medium- and low-temperature applications. Includes refrigeration accessories, metering devices and advance control arrangements.
- HEA 205 Heat Pump Systems** 3 Credits
Provides an understanding of the different types of heat pumps available for use today. Familiarizes students with the refrigeration cycle as it applies to the heat pump systems. Provides students with the opportunity to draw, trace and follow an electrical schematic of a heat pump with refrigerant. Includes selecting the proper heat pump, recording heat loss and gain calculations for the space available. Provides instruction in mechanical components and in troubleshooting a non-functioning heat pump.
- HEA 206 Advanced Cooling Service** 3 Credits
Considers methods of troubleshooting electrical and mechanical components of air conditioning and refrigeration systems.
- HEA 207 HVAC Codes** 3 Credits
Study of state and local codes covering installation, repair, alteration, relocation, replacement and erection of heating, ventilation, cooling and refrigeration systems. Includes job-related costs of material and equipment, labor, warranty, taxes, permits and sub-contracts. Students will estimate service and maintenance contracts.

HEA 208 Energy Management and Balancing 3 Credits

Deals with reduction in energy usage in a facility, operational and maintenance improvements, new building design standards, shut-down and consolidation, alternate energy resources, retrofitting existing buildings and energy awareness. Includes practice in adjusting and setting fan speeds, dampers and other air regulating devices.

HEA 209 Psychrometrics/Air Distribution 3 Credits

Studies the properties of air during the operational variations of temperature and humidity. Discusses the atmospheric conditions and the impact of those conditions on the heating-cooling processes and the design of systems for residential and commercial structures. Includes the sizing and configurations of air delivery duct systems and system design methods.

HEA 210 Alternative Energy Systems 3 Credits

Studies the magnitude of the energy available, the various methods used in collecting this energy, how to use it and how to store it for heating and cooling work. Selects components of the systems, including collector cells sizing, pump sizing, pipe and duct sizing and designing distribution systems. Reviews controls for systems. Studies operating costs and savings.

HEA 211 Absorption Systems 3 Credits

Surveys special cooling systems with emphasis on the absorption cycle. Includes ammonia-water and lithium-bromide cycles, types of units, arrangements, parts, function of various parts and applications of units into air conditioning systems in addition to diagnosis of service problems.

HEA 212 Advanced HVAC Controls 3 Credits

Covers control systems beyond ordinary residential and single zone commercial applications. Includes solid state controls, zoning controls, modulating controls, low ambient controls, heat recovery and energy management controls, economizer controls and pneumatic controls.

HEA 213 Sales and Service Management 3 Credits

Encompasses the use of blueprints, specifications, AIA documents, application data sheets, bid forms and contracts in estimating materials and labor in the HVAC business. Includes advertising, direct labor, indirect labor, overhead, warranty overages, taxes, permits, subcontracts, margins, mark-ups and profit. Provides students with the opportunity to estimate service contracts and study service organization, service procedures, record keeping, parts inventory control and insurance liability.

Course Descriptions

HEA 214 Applied Design 3 Credits

Provides students with the opportunity to design and lay out a complete HVAC system.

HEA 220 Distribution Systems 3 Credits

Covers methods used in calculating building envelop heat loss and gain in sizing units for residential and light commercial application. Studies the relationship of air properties to temperature and the design of systems for residential and light commercial structures. Includes the sizing and configurations of air delivery duct systems.

HEA 221 Heat Pumps and Cooling Service 3 Credits

Covers procedures used to diagnose electrical control problems found in residential air-to-air, geothermal heat pump and cooling systems, including 24 volt and line voltage controls. Familiarizes students with the refrigeration cycle as it applies to the heat pump. Covers correct charging procedures and sizing of heat pumps. Includes trouble shooting of heat pumps and cooling systems such as defrost timers, defrost heaters, relays and cold controls with emphasis on schematic and pictorial diagrams.

HHS 101 Medical Terminology 3 Credits

Addresses basic terminology required of the allied health professional. Presents Greek and Latin prefixes, as well as suffixes, word roots and combining forms. Emphasizes forming a solid foundation for a medical vocabulary including meaning, spelling and pronunciation. Includes medical abbreviations, signs and symbols.

HHS 102 Medical Law and Ethics 2 Credits

Presents ethics of medicine and medical practice, as well as legal requirements and implications for allied health professions.

HHS 103 Dosage Calculation 1 Credit

Introduces the mathematical concepts required of the allied health professional to accurately administer medications.

HHS 104 CPR and Basic Health Awareness 1 Credit

Provides students with information necessary to recognize the need for one and two person cardiopulmonary resuscitation (CPR) as it relates to adults, children and infants. Requires students to safely perform CPR.

HMS 101 Introduction to Human Services 3 Credits

Explores the history of human services, career opportunities and the role of the human service worker. Focuses on target populations and community agencies designed to meet the need of various populations.

HMS 102 Helping Relationship Techniques 3 Credits

Examines the helping process in terms of skills, helping stages and issues involved in a helping relationship. Introduces major theories of helping.

HMS 103 Interviewing and Assessment 3 Credits

Develops skills in interviewing and provides a base for students to build personal styles. Introduces a variety of assessment approaches and treatment planning. Utilizes case studies and recording exercises.

HMS 104 Crisis Intervention 3 Credits

Provides beginning training for individuals presently working with people in crisis situations or planning to do so.

HMS 105 Criminal Justice Systems 3 Credits

Introduces the study of crime and criminals and how society is affected.

HMS 106 Physiology of Aging 3 Credits

Focuses on the physical changes and common pathologies associated with the aging process. Includes the psychological and social implications of changes for human behavior. Focuses on health promotion and disease prevention.

HMS 107 Human Services Topical Seminar 3 Credits

Discusses topics of current interest in human services. Focuses on special interest projects for students in human services. Utilizes field trips, guest speakers, audio-visual activities and seminars.

HMS 108 Psychology of Aging 3 Credits

Covers the major behavioral changes in adulthood and aging.

HMS 109 Families in American Culture 3 Credits

Covers the impact of change on the role and function of the modern family, the nature of the socialization process and socio-economic, cultural and ethnic factors that nurture or inhibit the family's capacity to function.

HMS 111 L.T.C. Activity Director 3 Credits

Explores the philosophy and investigates the development of therapeutic activity programs for residents living in nursing homes. Focuses on offering activities which meet an individual's physical, social and emotional needs.

HMS 112 Recreation for Special Populations 3 Credits

Studies the nature and etiology of impairments including developmental disabilities, mental illness, physical disabilities and geriatrics and their

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potential impact upon an individual's ability to participate in recreational activities. Explores techniques needed to conduct a recreation program which allows successful participation by an individual with a disability.

HMS 113 Problems of Substance Abuse in Society 3 Credits

Provides basic information about alcohol and drugs and the laws which pertain to their abuse. Explores current attitudes and practices which pertain to alcohol and drug use, misuses and dependence.

HMS 114 Social Services in Long-Term Care 3 Credits

Provides practical and useful information about aging and institutionalization. Focuses on the role of social services within the long-term care facility.

HMS 115 Applied Behavioral Psychology 3 Credits

Studies the unique capacities and personal strengths of self and others.

Emphasizes discovering, clarifying and affirming individual potential for living more fully. Discusses the complex nature of human development, human behavior and related social problems.

HMS 118 Introduction to Long-Term Care 3 Credits

Explores the history of health care provided outside the home and offers an overview of long-term health care facilities. Includes rules and regulations of nursing homes, resident rights, legislation and physical plant requirements.

HMS 119 Interdisciplinary Team Management 3 Credits

Explores principles and relationships of the interdisciplinary team, the various departments which may compose the team and the services each department provides.

HMS 120 Health and Aging 3 Credits

Provides holistic overview of the physical, psychological and social needs of individuals who live in extended care facilities. Examines effective treatment modalities to meet the resident's various needs.

HMS 121 Issues of Long-Term Care 3 Credits

An overview of various issues to familiarize students with responsibilities of nursing home administrators. Management styles, models, quality circles and personal improvements are covered.

HMS 122 Introduction to Residential Treatment 3 Credits

Introduces information, skills and attitudes necessary to become an effective worker in residential treatment. Explores basic developmental needs, planning and use of activities, and issues related to the team approach. Discusses and demonstrates observation and recording of behavior.

HMS 130 Social Aspects of Aging 3 Credits

Covers major theories and patterns of aging in American society. Covers social institutions and cultural factors that affect the aging process.

HMS 140 Loss and Grief 3 Credits

Provides practical and useful information for anyone who has experienced a loss. Addresses the problems of loss and grief and how to develop coping skills.

HMS 150 Special Population Needs and Activities 3 Credits

Recognizes and utilizes social activities and recreation as a viable form of therapeutic intervention based on the client's limitations or special needs.

HMS 201 Internship 1 4 Credits

Provides field work experience in an approved social, educational, law enforcement, corrections or other community service organization. Requires 14 to 16 hours of work experience each week.

HMS 202 Internship 2 5 Credits

Continues Internship 1. Requires 14 to 16 hours of work experience each week.

HMS 203 Internship Seminar 1 3 Credits

Permits small group discussion and analysis of the human services practicum experience. Includes special learning objectives related to the kind of work students do after completing the program.

HMS 204 Internship Seminar 2 3 Credits

Continues Internship Seminar 1 with different learning objectives. Relates objectives to the work the student will do after completion of the program.

HMS 205 Behavioral/Reality Techniques 3 Credits

Focuses on theories of behavioral and reality approaches. Develops understanding of terms and practical applications of the behavioral and reality approaches used in working with people.

HMS 206 Group Process and Skills 3 Credits

Studies group dynamics, issues and behavior. Includes group functioning and leadership, guidelines on working effectively with a co-leader and practical ways of evaluating the group process.

Course Descriptions

HMS 207 Program Planning/Policy	3 Credits
Deals with the components of administration of human service agencies.	
Addresses practitioner skills needed by administrators or supervisors. Discusses social policy issues and impact on human services.	
HMS 208 Treatment Models of Substance Abuse	3 Credits
Describes the various treatment models used with chemically dependent clients. Discusses intervention and treatment models for chemical dependency and their role in the recovery process.	
HMS 209 Counseling Issues	3 Credits
Explores practice strategies for counselors of chemically dependent clients.	
HMS 210 Co-dependency	3 Credits
Presents definitions of co-dependency and issues related to it. Teaches skills and techniques to confront co-dependent behavior.	
HMS 215 Juvenile Delinquency	3 Credits
Provides an overview of the concepts, definitions and measurements of juvenile delinquency. Explores various theories which attempt to explain causes of delinquency. Looks at the role of environmental influences (peers, gangs, school, drugs, etc.) contributing to delinquency. Discusses history and philosophy of the juvenile justice system as well as ways to control and treat juvenile delinquents.	
HMS 220 Legal Aspects	3 Credits
Provides an overview of the legal and ethical aspects in the field of human services with implications for the human services worker. Includes liability, confidentiality and privilege, records and rights of clients, due process and equal protection in terms of staff and client, discrimination and witnessing.	
HMS 230 Abnormal Psychology	3 Credits
Introduces abnormal psychology to acquire skill in understanding personality, attitude and emotional disorders which require intervention.	
HMS 240 Rehabilitation Process: Probation and Parole	3 Credits
Provides an understanding of probation and parole as an integral part of the criminal justice system with special emphasis on current and future trends in this area. Explores the role of community corrections and its impact on the role of probation and parole in our society in view of the increase in the number of offenders.	

HMS 281-293 Special Topics in Human Services 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

**HMT 100 Occupational Safety and Health Administration 3 Credits
(OSHA) Regulations**

Provides a study of the U.S. Occupational Safety and Health Administration's (OSHA) regulations which protect workers from exposure to occupational hazards. Concentrates on researching, interpreting, summarizing and applying the OSHA regulations for workers who handle hazardous materials.

HMT 104 Hazardous Materials Health Effects 3 Credits

Reviews research conducted to determine the systematic health effects of exposures to chemicals. Includes determination of risk factors, routes of entry of hazardous materials and their effects on target organs, acute and chronic effects and control measures.

HMT 120 Hazard Communication Standard 3 Credits

Provides instruction concerning the development and implementation of a hazard communication program for employees. Provides experience in conducting a chemical inventory, interpreting material safety data sheets (MSDSs), developing a written hazard communication program that complies with 29CFR 1910.1200 and conducting an effective hazard communication training program.

**HMT 200 Environmental Protection Agency (EPA) 3 Credits
Regulations**

Provides a detailed study of the U.S. Environmental Protection Agency (EPA) regulations pertaining to hazardous waste management, with an emphasis on the requirements of the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA).

HMT 201 Contingency Planning 3 Credits

Teaches students to develop an emergency response contingency plan for a facility or community. Includes analyzing the hazards, writing and implementing the contingency plans, training employees for an emergency and evaluating the effectiveness of the contingency plan.

Course Descriptions

HMT 203 Sampling Procedures	3 Credits
Introduces students to a variety of sampling procedures used in industrial settings and for emergency response. Includes sampling and monitoring devices, industrial hygiene monitoring, water and waste stream monitoring, outside air sampling, soil sampling and radiation. Emphasizes collecting and preserving representative samples, interpreting laboratory results and complying with relevant federal regulations.	
HMT 205 Department of Transportation (DOT) Regulations	3 Credits
Provides a detailed study of the U.S. Department of Transportation (DOT) regulations. Introduces certain Nuclear Regulatory Commission and Environmental Protection Agency regulations pertinent to hazardous materials transportation. Includes problems and case studies in which students identify and interpret applicable DOT regulations and recommend compliance strategies. Provides practical understanding of DOT issues through interviews with local professionals in hazardous materials handling.	
HMT 220 Hazardous Materials Recovery, Incineration and Disposal	3 Credits
Explains methods of recovery, incineration and/or disposal of hazardous waste. Includes contracting with qualified disposal organizations, obtaining permits and ensuring regulatory compliance of hazardous waste.	
HOS 101 Sanitation and First Aid	3 Credits
Helps students learn basic principles of sanitation and safety in order to maintain a safe and healthy food service environment. Presents the laws and regulations related to safety, fire and sanitation and how to adhere to them in the food service operation.	
HOS 102 Basic Foods Theory and Skills	3 Credits
Students learn the fundamentals of food preparation service procedures, sanitation and safety practices in the food service business. They will use proper operation techniques for equipment. This course also provides a background and history of the hospitality industry and introduces the student to the broad spectrum of hospitality/food service organizations and career opportunities. Students will be familiarized with the organizational structure and basic functions of departments.	
HOS 103 Soups, Stocks, and Sauces	3 Credits
Concentrates on the four major stocks and the soups that are derived from them. Time will be given to help develop the necessary skills to prepare food using any one of the 14 major cooking methods.	

HOS 104 Nutrition 2 Credits

Introduces the characteristics, functions, and food sources of the major nutrient groups and how to maximize nutrient retention in food preparation and storage. Students will be made aware of nutrient needs throughout the life cycle and to apply those principles to menu planning and food preparation.

HOS 105 Introduction to Baking 3 Credits

Presents fundamentals of baking science, terminology, ingredients, weights and measures, yeast goods, pies, cakes, cookies and quick breads and use and care of equipment. Emphasizes sanitation, hygienic work habits and conformity with health regulations.

HOS 106 Pantry and Breakfast 3 Credits

Covers the techniques and skills needed in breakfast cookery, as well as insight to the pantry department. Various methods of preparation of eggs, pancakes, waffles and cereals will be discussed. Students will receive instruction in salad preparation, salad dressings, hot and cold sandwich preparation, garnishes and appetizers.

HOS 107 Hospitality Computer Systems 3 Credits

Provides an overview of the information needs of lodging properties and food service establishments; addresses essential aspects of computer systems and computer based property management systems for both front office and back functions. Focuses on computer-based restaurant management systems for both service-oriented and management-oriented functions.

HOS 108 Table Service 3 Credits

Provides students with practical knowledge and skills of various types of service operations. The student will gain knowledge and an appreciation of the relationship between "front" and "back" of the house. Emphasis is also placed on management skills needed for bar and dining room management.

HOS 109 Hospitality Purchasing 2 Credits

Studies in detail major groups of food purchased by quantity buyers including fresh fruits and vegetables, dairy products, meats and seafood, processed products, beverages and non-food items. Outlines the essentials of effective F & B control while establishing systems for sale values for food and beverages.

HOS 114 Hospitality Organization & Administration 3 Credits

Analyzes management's functions and responsibilities in such areas as administration, organization, communications, accounting, marketing, and human relations.

Course Descriptions

HOS 201	Hospitality Organization and Human Resources Management	3 Credits
Teaches the necessary skills for proper recruiting, staffing, training and managing employees at various levels in hospitality careers. Emphasizes the organization's evolutionary and problem solving process.		
HOS 202	Garde Manger	3 Credits
Illustrates basic garde manger principles and the functions and duties of the garde manger department as they relate and integrate with other kitchen operations. Students will focus on introduction to specialty work which includes ice carving, artistic center pieces and buffet decorations. They will demonstrate equipment and garde manger area planning.		
HOS 203	Menu, Design and Layout	2 Credits
Provides the skills needed to apply the principles of menu planning to various types of facilities and services. This course covers menu layout, selection and development and pricing structures.		
HOS 204	Food and Beverage Cost Control	2 Credits
Introduces mathematical principles applied to the food service industry and uses skills to complete food related tasks.		
HOS 205	Food and Beverage Cost Controls	1 Credit
Covers the principles and procedures involved in an effective system of room, food, beverage, labor and sales income. Emphasizes the development and use of standards in the calculation of cost.		
HOS 206	Fundamentals of the Catering Business	3 Credits
Introduces the fundamentals of owning and operating a small catering business including personal, legal and operational requirements.		
HOS 207	Classical Pastries and Chocolates	1 Credit
Covers classical French and European desserts. Includes the preparation of goods such as Napoleons, Gateaux St. Honore, petits fours and petits fours sec, ganaches, pastry creams and fillings, sauces, flans and tarts and European sponges. Includes tempering of chocolates, molding and chocolate plastique, preparation of truffles, pastilage and marzipan, short doughs and meringues. Requires students to submit three pieces from the American Culinary Federation approved individual pastry display category to be judged as a final practical exam.		

HOS 214 Hospitality Law and Security 3 Credits

Provides an awareness of the rights and responsibilities that the law grants to or imposes upon a hotel keeper. Illustrates the possible consequences of failure to satisfy legal obligations.

HOS 216 Hospitality Marketing and Sales 3 Credits

Presents a practical understanding of the operating statement and precisely where, how and why the sales effort fits into total earnings and profit. Teaches how to measure and gauge accurately the precise worth of every type of business in advance.

HOS 221 Catering Administration 3 Credits

Provides instruction in the fundamentals of catering, including the business of supplying food, goods and organized service for public and private functions. Includes staffing, equipment, transportation, contracting, special arrangements, beverage service and menu planning. Demonstrates techniques of setting up banquets and buffets. Requires students to plan, budget, cost, test recipes and formats, plan decor, service and entertainment for catered events.

HOS 280 Co-op/Internship 1-6 Credits

Requires students to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

**HOS 281-293 Special Topics in Hospitality 1-5 Credits
Administration**

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

**HRM 107 Organization and Human Resources 3 Credits
Development**

This course presents the student with opportunities to demonstrate problem solving abilities and techniques in common business and industry settings. Case histories and in-basket situations are used to train, demonstrate, and evaluate decisions common to management positions.

HRM 203 Practicum 3 Credits

Offers practical work experience in a commercial food service or hotel establishment in order to build specialized skills. Practicum will look at technical and management skills. An agreement must be completed by the

Course Descriptions

student, the establishment and the practice coordinator prior to the start of the course. Students should have a site in mind prior to registering for this course (coordinator will assist).

HRM 204 Food and Beverage Management 3 Credits

Presents principles and practices of food and beverage production and service. Discusses management philosophies regarding sanitation, menu planning, cost and labor control, employee training, purchasing and merchandising of food and beverage.

HRM 205 Front Office 3 Credits

A systematic approach to front office procedures, detailing the flow of business through a hotel beginning with the reservation process and ending with billing and collection procedures within the context of the overall operation of a hotel. Examines front office management, the process of handling complaints, and concerns regarding hotel safety and security.

HRM 206 Supervisory Housekeeping 3 Credits

Introduces the fundamentals of housekeeping management. Emphasis is placed on employee training, record-keeping, health and safety cost control, and overall responsibilities.

HRM 208 Housekeeping Techniques 3 Credits

Provides the basic tools required in institutional housekeeping. Includes instruction in accepted cleaning techniques.

HRM 209 Apartment Management 3 Credits

Examines the responsibilities of landlords and tenants in apartments, townhouses, condominiums and other permanent rental properties. Includes study of small and large complexes, business and maintenance details and roles of personnel in each setting.

HRM 210 Hotel Supervision 3 Credits

Offers case problems in hospitality management. Students are expected to assess realistic situations that confront modern hospitality executives.

HRM 211 Financial Management 3 Credits

Applies accounting principles to the hospitality industry. Includes business principles pertaining to food and lodging, methods of recordkeeping for creditors, owners, and government and payroll control. Emphasizes tax laws specific to the industry, expense control and techniques of profitable management.

HRM 213 Property Management 3 Credits

Covers all phases of property management including first impression, staffing, training, capital investments, cost analysis, rentals and renovation.

HRM 214 Tourism 3 Credits

Provides comprehensive study of tourism principles, practices and philosophies. Offers practical education in the business of tourism.

HRM 215 Hotel-Motel Seminar 3 Credits

Offers opportunities by means of guest lectures and group discussion to explore particular problems or topics of current interest.

HRM 216 Basic Cooking I 3 Credits

Includes lectures and demonstrations in the fourteen basic forms of food preparation.

HRM 217 Fish and Seafood 3 Credits

Instructs in preparing hot and cold fish, crustaceans, shellfish and mollusks. Includes baking, poaching, braising, sauteing, deep fat frying, broiling, grilling and gratin methods.

HRM 218 Meat Preparation 3 Credits

Introduces basic methods of preparation for beef, veal, pork, lamb, poultry and game. Includes sauteing, broiling, grilling, stewing, simmering, poaching, boiling and braising methods.

HRM 219 Meat I 3 Credits

Focuses on meat identification as established by the National Association of Meat Purveyors. Demonstrates the cutting of carcasses into primal cuts and the breakdown of beef, lamb and pork.

HRM 220 National Dishes 3 Credits

Applies basic cooking methods and forms of preparing national dishes. Features the preparation of Swiss, French, German, English and American, Italian, Austrian and other fine cuisines.

HRM 221 Basic Cooking II 3 Credits

Provides skill development in the preparation of bases, stocks, sauces and soups.

HRM 223 Buffet Catering 3 Credits

Provides advanced instruction in cold food preparation and presentation techniques, including charcuterie, specialty canapes, hors d'oeuvres, appetizers, pates, galantines, chaudfroids, terrines, tallow and ice carving, aspics,

Course Descriptions

mousses, cold sauces, vegetable carving and food decoration. Covers food materials utilization, buffet planning, layout, equipment, zoning and services. Provides a practical approach to decorating platters for industrial and classical buffets. Requires students to plan, prepare, present and serve a cold buffet.

HRM 224 Blown and Pulled Sugar

3 Credits

Teaches fundamental techniques of sugar work which prepares culinarians to blow and pull sugar to create unique table decorations.

HRM 225 Server Training

3 Credits

Trains professional waiters and waitresses in proper serving techniques.
Emphasizes human relations and communication skills.

IDS 102 Introduction to Print Reading

3 Credits

Provides an introduction to reading and interpreting machine shop symbols, welding blueprints and working drawings used in trades and crafts. Focuses on dimension, shape, fabrication and assembly. Applies basic mathematics to the solution of print and performance problems.

IDS 103 Motors and Motor Controls

3 Credits

Provides a complete understanding of all types of electric motors, extending from the small shaded pole fan motors to the large three-phase motors.

Includes motor theory magnetism and how it affects motor rotation. Provides in-depth study of motor starting components and protective devices for motor circuits. Includes heat dissipation from a motor, motor slippage, how motors are wired to obtain different speeds, and capacitors and how they affect a motor circuit.

IDS 104 Fluid Power Basics

3 Credits

Introduces the student to fluid power principles and components. Teaches basic circuit design, symbols and schematic diagrams to build a foundation for career work in fluid power technology.

IDS 114 Introductory Welding

3 Credits

Provides basic skills and fundamental knowledge in oxyacetylene and shielded metal welding for maintenance welders, auto service and body technicians, and individuals in the mining industry. Emphasizes industry welding practices and detailed study of techniques used in all weld positions. Covers brazing and flame cutting and electrode selection and uses. Emphasizes safe practices in welding, cutting and shielded metal arc.

IDS 281-293 Special Topics in Industrial Technology 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

ILT 101 Industrial Laboratory Techniques 3 Credits

Deals with basic skills needed in the industrial laboratory such as safety, identification, care and operation of basic laboratory equipment including pH meters, spectrophotometers, glassware and definition and preparation of reagents. Includes laboratory exercises in the use of selected equipment.

ILT 201 Industrial Instrumentation and Techniques I 3 Credits

Addresses theoretical aspects of industrial laboratory instrumentation, including gas and liquid chromatography (GC and LC), high performance liquid chromatography (HPLC), infra-red (IR) spectrophotometry and atomic absorption (AA). Presents theories and laws that govern the way instruments operate. Includes student experimentation on various analytical instruments.

ILT 202 Industrial Instrumentation and Techniques II 3 Credits

Continues the theoretical study of ILT 201 by addressing industrial applications of laboratory instrumentation, including gas and liquid chromatography (GC and LC), high performance liquid chromatography (HPLC), infra-red (IR) spectrophotometry and atomic absorption (AA). Presents automation techniques, including sampling, data collection and analysis. Covers the laws that govern the way instruments operate. Includes student experimentation on various analytical instruments.

ILT 203 Environmental Monitoring 3 Credits

Deals with aspects of environmental pollution, providing a realistic and objective view of pollution problems. Includes the role of technology in the identification of environmental pollution.

ILT 205 Introduction to Technology 3 Credits

Reviews disciplines comprising scientific and engineering fields of study. Covers physics, chemistry, biology, environmental science, civil, mechanical, electrical and industrial engineering. Introduces theory, principles and practices related to the work of a scientific or engineering assistant/aide. Covers safety, professional ethics and use of the scientific calculator/computer as a scientific and engineering tool.

Course Descriptions

ILT 206 Food and Drug Analysis	3 Credits
Examines the food processing industry. Includes various analytical techniques and quality control standards utilized by the food industry. Includes classification of drugs and various methods of purification. Covers instruments and procedures used to monitor the quality and quantity of the composition of a product.	
ILT 207 Wastewater Analysis	2 Credits
Deals with the chemical and biological analysis of wastewater. Major pollutants of water are determined and quantified. The wastewater treatment steps are discussed to determine ideal lab sampling locations. Various wastewater tests such as BOD's, COD's, sedimentation rates and biological examinations will be performed.	
IMT 105 Heating and Air Conditioning	3 Credits
Presents fundamentals of heating and compression systems used in mechanical refrigeration and air conditioning. Includes combustion process, heat flow, temperature measurement, gas laws, heating and refrigeration cycles and components used in systems. Introduces basic mechanical service procedures used in industry.	
IMT 106 Millwright I	3 Credits
Introduces the proper use of hand and power tools and measuring instruments in carpentry, blacksmithing, rigging and equipment, machinist and general shop. Includes structural steel and fabricating terms.	
IMT 107 Preventive Maintenance	3 Credits
Focuses on detecting and correcting potential trouble spots and scheduling routine inspections with check lists. Studies five essential forms of preventive maintenance: equipment record, checklist, inspection schedule, inspection report and equipment cost record.	
IMT 108 Measurements and Calibration	3 Credits
Provides instruction in the purpose, function and application of oscilloscopes and related instruments.	
IMT 122 Electrical Wiring Fundamentals	3 Credits
Covers National Electrical Code and its relationship to residential and commercial wiring. Includes mechanical installation of hardware, metering equipment, lights, switches and design. Discusses tool use and materials selection.	

IMT 201 Fluid Power Systems 3 Credits

Introduces the student to more complex fluid power circuits. Requires students to design, analyze and troubleshoot complex circuits using schematic diagrams. Studies detailed construction of typical industrial fluid power components. Teaches students to disassemble and evaluate fluid power components in the lab.

IMT 203 Machine Maintenance/Installation 3 Credits

Examines procedures for the removal, repair and installation of machine components. Analyzes methods of installation, lubrication practices and maintenance procedures for industrial machinery. Presents techniques for calibration and repair of electro-mechanical devices and practice in computations pertaining to industrial machinery.

IMT 205 Programmable Controllers I 3 Credits

Introduces the basic theory, operation and programming of programmable controllers. Includes pilot control devices, circuit layouts, industrial schematics, relay logic, reduced voltage starters and multi-speed controllers. Covers static control systems. Demonstrates with programming examples, set-up examples and troubleshooting, as well as PLC timing, counting, arithmetic and logic.

IMT 206 Programmable Controllers II 3 Credits

Provides an in-depth study of programmable controllers. Emphasizes program language installation, maintenance and applications.

IMT 207 Electrical Circuits 3 Credits

Provides fundamentals of single- and three-phase alternating current, including parallel circuits, resistance, inductance, capacitance, switching, fusing, current requirements, transformer applications and motors and motor controls. Covers the basics of mechanical and electrical installations, emphasizes tool use and material selection, and electrical troubleshooting diagnosis and repair.

IMT 210 Pumps 3 Credits

Covers the construction and operation of centrifugal, reciprocating and rotary pumps and their components. Includes procedures of troubleshooting, installation and maintenance.

INT 101 Fundamentals of Design 3 Credits

Surveys elements and principles of interior design and color theory. Emphasizes effective and creative application and problem solving.

Course Descriptions

INT 102 Structural Systems	3 Credits
Provides interior design students with a basic knowledge of building structures, construction techniques and building materials. Introduces technical skills needed to read and draft blueprints.	
INT 103 Environmental Design I	3 Credits
Stresses the fundamentals of space analysis and functional planning based on the principles of design and user behavior as they relate to the interior environment. Introduces the mechanics of presenting the interior plan.	
INT 104 Textiles for Interiors	3 Credits
Covers textile identification and classification from fiber to finish.	
INT 105 Design Presentations	3 Credits
Presents the elements of two- and three-dimensional design concepts as related to interior representational drawings. Emphasizes interior space perception for realistic presentation to clients.	
INT 106 Environmental Systems	3 Credits
Introduces environmental systems concepts in architecture. Utilizes drafting exercises as an aid to understanding these systems.	
INT 107 Color and Light	3 Credits
Introduces color theory, including additive and subtractive systems. Covers the effects of various types of lighting on color.	
INT 108 Environmental Design II	3 Credits
Emphasizes the relationship between individuals and their surroundings. Explores the psychological concepts pertaining to the design of space.	
INT 109 History of Interiors I	3 Credits
Surveys the development of the inter-relationship of architecture, art and interior environments from antiquity through the 18th Century.	
INT 110 History of Interiors II	3 Credits
Studies the development of the interior environment from the 19th Century to the present.	
INT 201 Materials and Methods	3 Credits
Examines physical properties and characteristics of various building materials including textile products. Addresses problems in specifying, estimating and installing these materials.	

INT 202 Contract Design	3 Credits
Introduces categories of commercial design and their specialized requirements.	
INT 203 Professional Practices	3 Credits
Introduces business principles and practices as they relate to the interior design profession. Includes business and installation procedures, methods of charging and the steps involved in business formation.	
INT 204 Environmental Design III	3 Credits
Explores the physiological, psychological and phenomenal aspects of color and light on interior space. Emphasizes application of appropriate materials and components selection.	
INT 205 Hotel and Restaurant Design	3 Credits
Covers special design considerations for the hospitality industry. Includes meeting rooms, dining rooms, guest rooms, common areas and restaurant layout.	
INT 206 Custom Design in Interiors	3 Credits
Develops original designs for furnishings, textiles and accessory pieces.	
INT 207 Design Studio I	3 Credits
Includes laboratory experience with case studies designed to provide experience in creating a complete design selection.	
INT 208 Design Studio II	3 Credits
Continues Design Studio I.	
INT 209 Portfolio Preparation	3 Credits
Summarizes student achievements in the interior design department. Provides students with quality portfolio work which demonstrates the knowledge and skills needed to perform as a professional interior designer.	
INT 210 Project Management	3 Credits
Concentrates on the selection of accessories and specific procedures for installation of various categories of materials. Emphasizes the sequence of installation procedures for a job from the signing of the contract to completion of the job.	
INT 211 Support Systems Planning	3 Credits
Covers requirements and space planning for kitchens, baths and support systems. Includes standardization of cabinetry and fixtures, as well as expectations for the planned areas.	

Course Descriptions

INT 212 Historic Preservation	3 Credits
Researches the process of establishing historic properties. Covers preservation, restoration and adaptive reuse of public and private properties.	
INT 213 Field Study I	3 Credits
Requires field placement or research project within student's occupational specialties, including collection and analysis of data and work experience in business and industry.	
INT 214 Field Study II	3 Credits
Continuation of Field Study I.	
INT 215 Independent Study	3 Credits
Develops projects from specialty areas which will allow design resolution, presentation and job management to be experienced by students.	
INT 216 Computer Graphics	3 Credits
Includes investigation of the concepts, techniques and skills required for computer graphics. Covers the use of computer-aided drafting programs for 2D and 3D drawing and database extracting.	
INT 217 Visual Merchandising	3 Credits
Introduces principles of display, special techniques and equipment required in display work.	
INT 218 Health Care Design	3 Credits
Introduces interior design of the health care environment, including consideration of health and safety codes, finishes, equipment and furnishings specific to the health care environment.	
INT 219 Special Projects	3 Credits
Involves a project of student's choice as determined in conference with a faculty advisor. Includes all phases of professional interior research and practices. Requires filing of a signed contract with the department chairperson prior to enrollment.	
INT 280 Co-op/Internship	1-6 Credits
Requires students to work at job sites that are specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.	

INT 281-293 Special Topics in Interior Design 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

LEG 101 Office Management and Ethics 3 Credits

Includes instruction on automated and manual docket and conflict control system, file organization, closed file control, research segregation, client funds handling and management tasks. Stresses internal communication skills and compliance with the rules of professional conduct.

LEG 102 Legal Research and Writing 4 Credits

Includes the study and use of legal research tools such as digests, loose leaf services, reporters, statutory compilations and forms books. Presents legal writing format and methodology through practical application in drafting memoranda, correspondence and selected forms. Emphasizes shepardizing and proper case citation skills.

LEG 103 Civil Procedure 3 Credits

Includes the study of selected Indiana trial rules and miscellaneous local rules. Presents filing requirements, calculation of deadlines and certain pretrial techniques.

LEG 104 Torts 3 Credits

Includes a survey of the law of comparative negligence, product liability, defamation, false arrest and other civil wrongs, including knowledge of the elements of such causes of action.

LEG 105 Business Associations 3 Credits

Includes the study of various business structures and the formalities required for such structures. Surveys partnership, agency and corporation law.

LEG 106 Claims Investigation 3 Credits

Studies witness interview techniques, preservation of evidence, organizational skills and alternative methods of gathering facts. Emphasizes professional client intake and communication skills.

LEG 107 Contracts and Commercial Law 3 Credits

Surveys contract law and the Uniform Commercial Code. Presents special statutes regarding state unfair trade practices, consumer deception and consumer rights.

Course Descriptions

LEG 108 Property Law	3 Credits
Includes a survey of the law of real and personal property. Gives practical exposure to title searches, loan documentation, zoning requirements, financing statements, leases and deeds.	
LEG 109 Family Law	3 Credits
Surveys the law of dissolution, custody, child support and visitations, marriage and adoption. Presents financial declaration forms, client intake, Marion County Child Support Guidelines and available social services.	
LEG 110 Wills, Trusts and Probate	3 Credits
Includes a survey of the law of estates, wills, probate and guardianship, as well as intestate succession. Presents preparation of probate and administration forms, asset inventories and valuation, certain tax forms and accounting.	
LEG 111 Criminal Law and Procedure	3 Credits
Surveys Indiana criminal statutes and selected federal criminal laws. Emphasizes investigative and administrative skills.	
LEG 112 Bankruptcy	3 Credits
Includes a survey of the Federal Bankruptcy Act. Stresses skills necessary to accumulate personal financial information, compile initial schedules, collect and organize data for first meeting of creditors, complete proofs of claim and pursue certain creditor's rights.	
LEG 201 Appellate Procedure	2 Credits
Includes an in-depth study of the Indiana Rules of Appellate Procedure, with concentration on the mechanical aspects of preparation and filing of the record on appeal and the format required for the briefs submitted.	
LEG 202 Litigation	3 Credits
Studies the Indiana Rules pertaining to actual trial. Reviews the discovery process and its tools. Presents skills such as organizing and retrieving documents, taking witness statements, and summarizing, indexing and scheduling depositions. Surveys trial notebook preparation.	
LEG 203 Computers in the Law Office	3 Credits
Includes a survey of software support available to the law practitioner, such as litigation support and estate planning support. Presents the availability and use of research databases such as Dialog, Nexis, Lexis and Westlaw.	

LEG 204 Advanced Legal Writing 3 Credits

Develops and enhances legal writing abilities with a focus on the relationship of legal writing to the legal process and the basics of technical writing with emphasis on the theoretical and practical applications of legal communications.

LEG 280 Co-op/Internship 1-6 Credits

Requires students to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

LEG 281-293 Special Topics in Paralegal 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

LOG 101 Introduction to Materials Management 3 Credits

Studies factors influencing the flow of materials in a manufacturing enterprise. Covers basics of production planning and control, purchasing, forecasting, inventory and distribution issues. Concludes with an overview of just-in-time theory and practices.

LOG 102 Manufacturing 3 Credits

Introductory manufacturing course. Focuses on basic principles, practices and functions of manufacturing management. Includes applications in the service industries, such as utilities, hospitals and government.

LOG 103 Marketing 3 Credits

Introductory marketing course. Focus is on basic marketing strategy for targeting markets and developing a marketing mix of product, price, distribution and promotion.

LOG 201 Transportation Systems 3 Credits

Provides in-depth knowledge of transportation systems and their interrelationships with our economic, social, political and environmental systems.

LOG 202 Physical Distribution 3 Credits

Focuses on the major concepts and rationale for utilizing warehouse inventories to lower costs of transportation, improve customer service, avoid stockouts, improve purchasing economics and seasonal variability.

Course Descriptions

LOG 203 Sales Service 3 Credits

Designed to develop the art of selling. Sales knowledge and sales skills are applied to choices of products. Selling principles and the order processing cycle are emphasized.

LOG 204 Case Studies 3 Credits

Uses the case study method to apply the knowledge, principles and skills acquired in student programs.

LOG 208 Distribution Center Management 3 Credits

Studies warehousing from a depositor and operator viewpoint. Includes warehousing functions, location and specific site criteria, labor productivity, cost controls, equipment and packaging and customer service.

LOG 209 Export/Import I 3 Credits

Studies the practical application of export and import techniques and concepts, government regulations, documentation, and financial and transportation considerations of the movement of commerce from and to the United States.

LOG 210 Export/Import II 3 Credits

Familiarizes students with import practices, governmental regulations and carrier rate-making practices. Requires students to complete practical exercises, solve importing problems and work with the tariff schedule of the United States.

LOG 211 Transportation Pricing 3 Credits

Provides students with skills and techniques related to transportation pricing. Includes introduction, training and practice in freight management, freight classification, tariff interpretation and selection, zip code pricing and contract and negotiations.

LOG 212 Freight Loss and Damage Claims 3 Credits

Covers appropriate methods for claims management, damage claims prevention, legal remedies for disputed claims and transportation regulations.

MEA 102 First Aid and CPR 2 Credits

Provides students with information necessary to recognize emergency situations, know the proper course of action with different types of emergencies and apply appropriate first aid, including CPR.

MEA 113 Pharmacology 3 Credits

Discusses the most common medications in current use with emphasis on classifications, uses, routes of administration, dosages, interactions, incompatibilities and side effects. Emphasizes the 50 most commonly prescribed drugs

listed in *Pharmacy Times*. Addresses special precautions, legal aspects, patient education and preparation and administration of medications.

MEA 114 Medical Assisting Laboratory Techniques 3 Credits

Prepares student to perform various basic laboratory procedures, including preparation of patients, collecting and preparing appropriate specimens and expected norms of laboratory test results. Includes current safety and quality control standards.

MEA 115 Medical Insurance 2 Credits

Provides an overview of medical insurance programs and skills developed in handling insurance forms, CPT and ICD-9-CM Coding and reports as applied to the medical office.

MEA 120 Medical Assisting Clinical Externship 3 Credits

Provides the opportunity to discuss and perform clinical procedures under supervision, with learning experiences obtained in selected physicians' offices, clinics or hospitals.

MEA 121 Medical Assisting Administrative Externship 3 Credits

Provides opportunities to observe, perform and discuss various administrative competencies under supervision, with learning experiences obtained in selected physicians' offices, clinics or hospitals.

MEA 130 Medical Office Administration 2 Credits

Provides an understanding of the administrative duties and responsibilities pertinent to medical offices. Develops communications skills specifically directed toward a medical office and the role of the professional medical assistant as a member of the health care team. Includes instruction in medical correspondence and records, case histories of patients, filing, telephone procedures, appointment scheduling, receptionist duties and processing mail. Includes development of desirable personality traits, inter-personal relationships and attitudes within the medical office.

MEA 131 Medical Financial Management 3 Credits

Provides instruction in medical office financial administration, bookkeeping and materials management.

MEA 132 Computer Concepts in Medical Office 2 Credits

Familiarizes students with computer applications in the health care setting. Provides students with basics of operations and applications of computer

Course Descriptions

usages within the health care provider office. Includes simulated data entry for patient records, procedures and diagnostic codes, insurance processing and electronic transmission of claims and scheduling day-sheet transactions in accordance with the AAMA DACUM guidelines.

MEA 133 Medical Assisting-Clinical Theory 3 Credits

Presents theory related to clinical aspects of the medical office. Includes theory related to vital signs, asepsis, sterilization, medication administration, EKG's, X-ray, nutrition, physical therapy and other skills needed to assist the physician in the clinical setting.

MEA 134 Medical Assisting - Clinical Skills Lab 2 Credits

Allows students to become familiar with clinical duties and gain the skills needed to perform them. Includes vital signs, asepsis, sterilization, medications, EKGs, X-ray, nutrition, physical therapy and other technical skills needed to assist the physician.

MEA 135 Medical Typing and Transcription 3 Credits

Develops skills and knowledge of medical dictation, machine transcription, and use of word processors and typewriters. Includes typing and transcription of medical reports, terminology and correspondence.

MEA 151 Pharmacy Technician I 3 Credits

Introduces basic skills and information needed to qualify as a Pharmacy Technician in the state of Indiana.

MEA 152 Pharmacy Technician II 3 Credits

Theory is applied through performance of competency levels of the technical pharmacy task including: properly preparing, documenting and processing prescriptions according to pharmacy policy and regulations; preparing intravenous and special solutions; properly preparing and maintaining records appropriate to the pharmacy, including quality control records, controlled substances (narcotic drug distribution), prescription data and records; applying basic principles of microbiology, using aseptic techniques and operating and maintaining the laminar hood. The student will employ proper communication skills (both written and verbal). Identification and adherence to check points will be emphasized. Current national and Indiana Law and administrative rules as they relate to the practice of the pharmacy technician will be presented. The importance of adherence to universal precautions will be discussed.

MEA 153	Administrative Aspects of Pharmacy Technology	2 Credits
Addresses the administrative aspect of pharmacy technology, including professional development, professional communication, time management, record keeping, computer applications, third party payment processing, operation of business machines and utilization of reference material.		
MEA 154	Pharmacy Externship	2 Credits
Provides the opportunity to discuss and perform clinical procedures under supervision, with learning experiences obtained in selected retail pharmacies and/or hospitals.		
MEA 203	Disease Conditions	3 Credits
Presents the basic concepts of diseases, their courses and functional disturbances as they relate to body systems. Includes the precipitating risk factors and appropriate methods of patient education regarding various disease processes.		
MEA 209	Electrocardiograph - Basic Technique	1 Credit
Presents the basic reasons for prescribing an electrocardiograph and the theory involved. The physiological principles involved are the basis for proper techniques that will be practiced by the students until they demonstrate competency with both the theory and required skills in doing a prescribed electrocardiograph.		
MEA 210	Introduction to EKG Interpretation	2 Credits
Includes anatomy and physiology of the cardiovascular system and recognition of basic arrhythmias. Measurement of the EKG complex will be taught with the emphasis placed upon determining heart rates and rhythms.		
MEA 211	Advanced Electrocardiograph Interpretation	3 Credits
Includes anatomy and physiology of the cardiovascular system, interpretation of rhythm strips and 12 lead EKG's and the cardiovascular drugs associated with arrhythmias.		
MEA 212	Phlebotomy	3 Credits
Presents the principles and practices of laboratory specimen collection and processing. Also covers medical terminology, infection control, patient identification, anatomy and physiology, anticoagulants, blood collection, specimen processing and interpersonal skills.		

Course Descriptions

MEA 213 Advanced Insurance Coding 3 Credits

Introduces the medical office administrator codes necessary to bill insurance claims and provides experience in coding claim forms using the correct combination of codes to maximize reimbursement.

MEA 214 Advanced First Aid and CPR 3 Credits

Provides students with information necessary to recognize emergency situations, know the proper course of action with different types of emergencies and apply appropriate first aid. Handling of victims of hazardous materials accidents will be addressed. Covers CPR, including one and two rescuer. Teaches adult, infant, and child resuscitation.

MEA 215 Advanced Medical Terminology 3 Credits

Includes more detailed and advanced study of the derivatives of medical terms, symbols and signs. Presents an in-depth study of the correlation between medical vocabulary and the application of those terms to the anatomy and physiology of the body, related diseases, conditions and treatment.

MEA 216 Nutrition 2 Credits

Presents the importance of a balanced diet; methods of evaluating a diet; the basic four food groups; the functions, requirements and food sources of fats, proteins, carbohydrates, vitamins, and minerals, and the deficiency diseases. Introduces meal planning, nutrition for various age groups, religious and nationality food habits, and diet therapy. Explains special diets for diabetes, diseases of the GI tract, urinary tract, blood, cardiovascular system, obesity, cancer, allergy and pregnancy.

MEA 217 Gerontology 3 Credits

Presents a multidisciplinary study of the sociological, psychological and physiological aspects of aging. Included will be patient education and the impact that all facets of aging have on the total person.

MEA 221 Seminar 1 1 Credit

Discusses topics of current interest in the medical assisting profession. Attention is given to special interest projects for students in the Medical Assistant program. Field trips, guest speakers, audio-visual activities and seminars may be utilized.

MEA 222 Seminar 2 2 Credits

Discusses topics of current interest in the medical assisting profession. Attention is given to special interest projects for students in the Medical Assistant program. Field trips, guest speakers, audio-visual activities and seminars may be utilized.

MEA 223 Seminar 3 3 Credits

Discusses topics of current interest in the medical assisting profession. Attention is given to special interest projects for students in the Medical Assistant program. Field trips, guest speakers, audio-visual activities and seminars may be utilized.

MEA 224 Hospital Coding 3 Credits

Designed to build on the comprehensive coding skills acquired through prerequisite course MEA 213. Introduces additional instruction in diagnostic related groups (DRG's) and medical record extraction. Provides discussion, observation and performance opportunities in related insurance coding competencies. Both classroom and clinical sites are utilized to provide realistic experiences under supervision. External sites include physicians' offices, clinics and hospitals.

MEA 225 Insurance Coding Externship 3 Credits

Provides opportunities to observe, perform and discuss various insurance related competencies under supervision, with learning experience obtained in selected physicians' offices, clinics or hospitals.

MEA 226 Medical Assisting - Advanced Clinical Procedures 3 Credits

Advances the knowledge and skills enabling the student to assist in clinical management in the medical and surgical specialties. Addresses health services in the community which are directed toward prevention of disease and maintenance and restoration of health.

MEA 227 Advanced Administrative Procedures 3 Credits

Provides an in-depth study of various influences on office functions concerning organization and management of a physician's office. Includes government and professional sources for consultation.

MEA 228 Ophthalmic Dispensing 3 Credits

Includes the study of frame types and parts, facial measurements for fitting, functional and cosmetic aspects of frame selection and frame alignment, adjusting and repair. Contact lenses, types, care, insertion and removal methods, modifications, polishing, and patient evaluation and education are also covered.

MEA 229 Ophthalmic Procedures 3 Credits

Includes techniques and theory used in optometric/ophthalmic practice. Included are case histories, visual acuity, refractive errors, retinoscopy, tonometry, color vision, eye movements, binocular vision, accommodation, convergence and divergence, visual axis deviation and pupil observation. Also

Course Descriptions

included are hypertension and measurement of blood pressure, diabetes, ocular pathology and pharmacology, biomicroscopy, vision screening, blindness and partial sight, low vision aides and vision therapy.

MEA 230 Structure and Function of the Eye 2 Credits

Familiarizes the student with the structure and function of the human eye. Pathological conditions will also be covered.

MEA 231 Basic Optics 3 Credits

Acquaints the student with basic optical principles. Fundamental properties of lenses and mirrors and how they relate to the correction of visual problems will be discussed. Types of optical defects commonly associated with vision will be covered. The student will be introduced to optometric instrumentation, fundamental soft lens formulas and visual field screening.

MEA 232 Clinical Optometric/Ophthalmic Practicum 2 Credits

This "hands on" field experience allows the student to put into practice, under supervision, skills and knowledge obtained in class and labs.

MEA 233 Health Unit Coordinator 5 Credits

Prepares students to provide reception and clerical support to the nursing unit to facilitate the delivery of nursing care. Students will gain skills in communication methods, problem solving, transcription processes, classification of orders and appropriate documentation procedures.

MEA 234 Phlebotomy Externship 3 Credits

Provides the opportunity to discuss and perform phlebotomy procedures under supervision with learning experiences obtained in selected laboratories, physicians' offices, clinics or hospitals.

MEA 235 Advanced Transcription 3 Credits

Improves accuracy and speed of the medical transcriptionist utilizing various formats for medical transcription.

**MEA 281-293 Special Topics in Medical Assistant
Technology** 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

MEA 299 CMA Comprehensive Review 3 Credits

Reviews the entire medical assisting program in preparation for the CMA registry examination. Administration, clinical and general information is covered. Testing procedures are addressed. Emphasis will be placed on job readiness and placement. The course will give continuing education units for graduate CMA's in order to fulfill their certification renewal requirements.

MKT 101 Principles of Marketing 3 Credits

Introduces the marketing role in society and how it affects the marketing strategy. Emphasizes the marketing mix, product planning and the effects of the demographic dimension on the consumer market.

MKT 102 Principles of Selling 3 Credits

Provides an overview of the selling process. Includes the psychology of selling and develops skills through a series of selling situations.

MKT 104 Advertising 3 Credits

Focuses on advertising as the key element in the promotion of goods and services in the marketplace. Includes advertising media and media selection, advertising copy strategy, advertising regulations and organization of advertising functions.

MKT 110 Consumer Behavior 3 Credits

Study of the basic principles of consumer behavior which offers insight into the buyer-seller relationship. Application of theories from psychology, social psychology, and economics are examined. Course examines concepts that have implications for marketing management decisions.

MKT 201 Introduction to Market Research 3 Credits

Presents basic research methods entailing procedures, questionnaire design, data analysis and effectively communicating research results.

MKT 202 Logistics/Purchasing Control 3 Credits

Introduces students to the framework of logistics, the logistics environment, customer services and materials management. Introduces material resources planning (MRP) and just-in-time (JIT) principles.

MKT 204 Marketing Management 3 Credits

Focuses on the analysis, implementation and control of marketing strategy. Emphasizes the major decisions management faces in its effort to harmonize the objectives and resources of the organization with the needs and opportunities of the marketplace.

Course Descriptions

MKT 205 Principles of Insurance	3 Credits
Introduces the risks faced by business firms, including property, liability and personal losses, and how they are handled. Presents insurance contracts and their uses. Includes an overview of life insurance, health and pension insurance, public policy, government regulations and social insurance.	
MKT 206 Sales Management	3 Credits
Studies the role of the sales manager emphasizing the leadership function. Focuses on building a sales team, judging sales performance, managing territories, sales recruiting and interviewing, training and development and managing the field sales office. Includes sales support and liaison, property, liability and operations.	
MKT 207 Public Relations	3 Credits
Provides broad coverage of the public relations field and acquaints students with the role of effective internal and external public relations in business and industry. Examines the goals and benefits of public relations, the tools of the public relations practitioner and the principles and trends of the field.	
MKT 219 Field Study/Cooperative Education	3 Credits
Provides students the opportunity to work at a job site that is specifically related to their career objectives. Provides field experience within the framework of actual work experience in marketing.	
MKT 220 Real Estate Sales	3 Credits
Provides instruction in accordance with the guidelines established by the Indiana Real Estate Commission. Includes property descriptions, marketing real estate, licensing, financing, contract, zoning, closing procedures and property management.	
MKT 221 Real Estate Broker	3 Credits
Provides instruction in accordance with the guidelines established by the Indiana Real Estate Commission. Includes property management, appraisal, investment, closing the real estate transaction and other topics.	
MLT 101 Fundamentals of Laboratory Technician	3 Credits
Introduces elementary skills required in the medical laboratory. Covers laboratory math, quality control, pipetting skills, veinipuncture techniques and microscope skills.	
MLT 102 Routine Analysis Techniques	3 Credits
Studies principles, practices and clinical laboratory techniques associated with routine analysis of urine and other body fluids.	

MLT 196 Introduction to Patient Care and Phlebotomy 3 Credits

Introduces the health care delivery system. Provides instruction in specimen collection techniques, infection control and safety, and teaches applications of communications concepts and stress management.

MLT 197 Clinical Phlebotomy Experience 3 Credits

Covers the practice and demonstration of clinical applications of phlebotomy in the clinical setting.

MLT 198 Clinical Phlebotomy Discussion 1 Credit

Develops the professional socialization process necessary to function in a health care setting and reviews routine and special phlebotomy procedures in light of phlebotomist-patient interaction.

MLT 201 Immunology Techniques 3 Credits

Provides students with an understanding of principles of the human immunologic system and experience in routine testing.

MLT 202 Immunohematology Techniques 3 Credits

Instructs students in practice and procedures used in blood banking in the clinical laboratory.

MLT 203 Instrumentation 2 Credits

Includes instrumentation theory and practice as applied to electronic equipment and automated systems in the medical laboratory.

MLT 204 Microbiology Techniques 4 Credits

Instructs students in principles of bacteriology, including gram negative and positive bacilli and cocci, fastidious organisms and an overview of anaerobic and acid-fast bacteria. Includes instruction in the basic laboratory techniques in clinical bacteriology.

MLT 205 Hematology Techniques I 3 Credits

Presents theory of blood formation and function and routine hematologic procedures with emphasis on differentiation of normal from commonly encountered abnormal blood cells. Includes basic theory of hemostasis and associated routine coagulation procedures. Presents clinicopathologic correlations.

MLT 206 Hematology Techniques II 3 Credits

Continues the study of principles and procedures in hematology and hemostasis. Introduces procedures beyond those routinely performed.

Course Descriptions

Continues cell differentiation with emphasis on early and less commonly encountered abnormal cells and associated special stains. Includes clinicopathologic correlations.

MLT 207 Chemistry Techniques I 3 Credits

Presents principles, procedures and clinicopathologic correlations in routine chemical analysis of the blood and other body fluids. Provides laboratory experiences in basic methods selected to develop routine analytical abilities and to promote the ability to recognize sources of error.

MLT 208 Chemistry Techniques II 3 Credits

Continues the study of principles, procedures and clinicopathologic correlations in the chemical analysis of blood and other body fluids. Introduces procedures beyond those routinely performed in the clinical chemistry laboratory, including clinicopathologic correlations.

MLT 209 Routine Analysis Applications 1 Credit

Studies clinical applications of routine urine analysis in the hospital laboratory including physical, chemical and microscopic examination of urine.

MLT 210 Hematology Applications 1 Credit

Studies and practices the principles and techniques of hematology in the hospital laboratory.

MLT 211 Microbiology Applications 4 Credits

Studies applications and clinical practices of microbiology found in the hospital laboratory.

MLT 212 Immunology Applications 1 Credit

Studies and practices the clinical application of serology in the hospital laboratory.

MLT 213 Immunohematology Applications 3 Credits

Studies and practices the principles and procedures used in blood banking in the hospital laboratory.

MLT 214 Chemistry Application 4 Credits

Studies and practices the analytical aspects of clinical chemistry in the hospital laboratory.

MLT 215 Parasitology and Mycology 1 Credit

Provides study in the isolation, identification, life cycles and disease processes of pathogenic fungi and parasites.

MLT 216 Elementary Organic and Biochemistry 3 Credits

Studies the chemistry of carbon-containing compounds and the biochemistry of lipids, carbohydrates, proteins, nucleic and enzymes. Includes related laboratory procedures.

MLT 217 Advanced Chemistry Technology 1 Credit

Presents principles and techniques of chemistry procedures beyond routine clinical chemistry testing, such as toxicology, endocrinology and inborn errors of metabolism.

MLT 218 Clinical Pathology 3 Credits

Examines various disease conditions, diagnosis, etiologies, clinical symptoms and related laboratory findings.

MLT 280 Co-op/Internship 1-6 Credits

Provides students with the opportunity to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

MTT 101 Introduction to Machining 3 Credits

Instructs students in shop safety, industrial terminology, tools and machine tooling, measurement and layout. Includes laboratory exercises to begin project completion of turning, milling and grinding applications.

MTT 102 Turning Processes I 3 Credits

Instructs students in shop safety and industrial terminology and provides laboratory experience toward project completion on the conventional lathe.

MTT 103 Milling Processes I 3 Credits

Instructs students in shop safety and industrial terminology and provides laboratory experience towards project completion on the vertical and/or horizontal milling machine.

MTT 104 Machinery Handbook 3 Credits

Explores the intent and use of the machinery handbook. Applies principles and concepts in the machinery handbook to projects in the industry.

MTT 106 Advanced Print Interpretation 3 Credits

Applies mathematics in solving engineering and design-related problems in the areas of die design, fabrication, assembly, special machinery, die casting and molds. Emphasizes GDT tolerancing.

Course Descriptions

MTT 110 Turning and Milling Processes **3 Credits**

Provides shop safety, industrial terminology and laboratory experiences on conventional lathe and milling machines.

MTT 202 Turning Processes II **3 Credits**

Instructs students in shop safety and industrial terminology. Provides adlathe.

MTT 203 Milling Processes II **3 Credits**

Covers shop safety, industrial terminology and provides advanced laboratory experience towards project completion on the vertical and/or horizontal milling machine.

MTT 204 Abrasive Processes I **3 Credits**

Provides shop safety, industrial terminology and laboratory experiences on abrasive processing machines. Includes superabrasives technology processes.

MTT 205 Abrasive Processes II **3 Credits**

Emphasizes shop safety, industrial terminology and provides advanced laboratory experience towards project completion on a variety of abrasive processing machines.

MTT 206 Tooling Design I **3 Credits**

Introduces concepts of tooling design, assembly, and standards of fabrication. Emphasizes jig and fixture design/components, application and operational characteristics.

MTT 207 Tooling Design II **3 Credits**

Covers concept of tooling design, assembly, and standards of fabrication. Emphasizes blanking, piercing, and progressive type dies, design/components including application and operational characteristics.

MTT 208 CNC Programming I **3 Credits**

Introduces two and three axis CNC machining. Develops the theory of programming in the classroom with application of the program accomplished on industry type machines. Studies terminology of coordinates, cutter paths, angle cutting, and linear and circular interpolation.

MTT 209 CNC Programming II **3 Credits**

Expands on MTT 208, providing further study in computer-aided numerical control programming. Focuses on canned cycles, loops, macros, thread cycles, drilling and pocket milling cycles.

MTT 210 Interactive CNC 3 Credits

Continues CNC Programming II. Introduces advanced applications of computer-assisted part programming and simulation, language codes set-up and operation, troubleshooting and problem solving in a CNC turning center and CNC machining center. Includes related mathematical skills.

MTT 211 Advanced Programming Techniques 3 Credits

Includes the application of advanced CNC programming techniques to industrial machining. Uses down loading and up loading techniques through advanced projects.

MTT 220 CAD/CAM I 3 Credits

Covers the development of various machine routines. Introduces computer-assisted machining as it relates to automated milling and machining centers. Emphasizes proper programming techniques, control familiarity, file data and machining functions.

MIT 221 CAD/CAM II 3 Credits

Covers the development of 3D shapes and the codes necessary to produce parts. Requires students to design a new product or modify an existing design. Includes creating surface curves. Focuses on creating toolpaths for complex 3D surfaces.

MIT 222 CAD/CAM III 3 Credits

Covers the development of geometry and codes necessary for machining an actual part. Introduces computer-assisted machining as it relates to automated lathes and turning centers. Emphasizes proper programming techniques, control familiarity, file data and machining functions.

NUR 101 Fundamental Nursing Concepts 4 Credits

Introduces the role of the associate degree nurse and the facts, concepts and principles underlying the nursing process. Emphasizes physical and psychosocial assessment. Identifies the components of the program philosophy, conceptual framework and terminal objectives.

NUR 102 Fundamental Nursing Concepts Practicum 4 Credits

Introduces associate degree nursing students to practices of the nursing process in campus and clinical laboratory settings. Develops assessment skills and initiates analyzing, planning, implementing and evaluating therapeutic measures through simulated and actual client care.

NUR 103 Life Cycle Nursing I 4 Credits

Identifies the role of the associate degree nurse in assisting people in meeting their needs from the child-bearing process through adolescence. Uses the

Course Descriptions

nursing process to develop the assessment, analysis, planning, implementation and evaluation of therapeutic measures that promote, maintain and/or restore health.

NUR 104 Life Cycle Nursing I Practicum 4 Credits

Provides campus and clinical laboratory experience to function in the role of the associate degree nursing student in providing care to clients during the child-bearing process through adolescence. Uses the nursing process to promote, maintain and/or restore health while providing quality nursing care.

NUR 105 NLN Mobility Profile I Book 1 5 Credits

Evaluates previous learning and experience to facilitate educational mobility.

NUR 106 Transition to Associate Degree Nursing 5 Credits

Socializes practical nurses into the role of associate degree nurses. Identifies the role of associate degree nurses in assisting people in meeting their needs from the child-bearing process through adolescence. Uses the nursing process to promote, maintain and/or restore health.

**NUR 107 Transition to Associate Degree
Nursing Practicum 3 Credits**

Provides campus and clinical laboratory experience to function as associate degree nursing students in providing care to clients from the child-bearing process through adolescence. Uses the nursing process to provide quality nursing care.

NUR 199 Comprehensive Competency Skill Review 3 Credits

Includes demonstration of specific procedures by faculty or other personnel, student laboratory practice, return demonstration of the specific skill by students and viewing audio visual aids pertinent to the clinical setting.

NUR 201 Life Cycle Nursing II 5 Credits

Examines the role of the associate degree nurse in prioritizing human responses which interfere with basic needs contributing to physical and psychosocial illness. Uses the nursing process to promote, maintain and/or restore health in young to middle-aged clients.

NUR 202 Life Cycle Nursing II Practicum 5 Credits

Provides clinical experience to demonstrate the role of the associate degree nursing student in providing care to clients in the young to middle-aged adult period. Bases nursing skills on identified scientific facts, concepts and principles. Emphasizes decision making and appropriate therapeutic communication.

NUR 203 Life Cycle Nursing III 5 Credits

Examines the role of the associate degree nurse in management and advanced communication concepts which are explored for groups of clients with multiple health care needs. Uses the nursing process to promote, maintain and/or restore health in older adult clients.

NUR 204 Life Cycle Nursing III Practicum 5 Credits

Provides clinical opportunity for demonstration and evaluation of personal effectiveness in fulfilling the role of the associate degree nursing student in assisting older adults in meeting their physical and psychosocial health needs. Provides opportunity to utilize the nursing process incorporating management and advanced communication techniques.

NUR 205 Issues in Nursing 2 Credits

Examines issues and nursing responsibility to meet changing patient needs. Integrates historic aspects, current developments, future trends, improvements in nursing practice, legal/ethical considerations and personal/professional growth.

NUR 211 Life Cycle Nursing I 5 Credits

Socializes practical nurses into the role of associate degree nurses. Identifies the role of associate degree nurses in assisting people in meeting their needs from the child-bearing process through the preschool years. Utilizes the nursing process to promote, maintain and/or restore health

NUR 212 Life Cycle Nursing II 5 Credits

Examines the role of associate degree nurses in prioritizing human responses which interfere with basic needs contributing to physical and psychosocial illness. Uses the nursing process to promote, maintain and/or restore health from preschool through early adulthood.

NUR 213 Life Cycle Nursing I Practicum 5 Credits

Provides students with campus and clinical laboratory experience to function as associate degree nursing students in providing care to clients from the child-bearing process through early adulthood. Uses the nursing process to provide quality nursing care.

NUR 221 Life Cycle Nursing III 4 Credits

Examines the role of associate degree nurses in prioritizing human responses which interfere with basic needs contributing to physical and psychosocial illness. Uses the nursing process to promote, maintain and/or restore health during the middle adulthood period.

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NUR 222 Life Cycle Nursing IV	4 Credits
Examines the role of associate degree nurses in management and advanced communication concepts. Uses the nursing process to promote, maintain and/or restore health in older adults.	
NUR 223 Life Cycle Nursing II Practicum	5 Credits
Provides students with clinical opportunity for demonstration and evaluation of personal effectiveness in fulfilling the role of associate degree nursing students. Utilizes the nursing process incorporating management and advanced communication techniques.	
OTA 101 Basics of Occupational Therapy	3 Credits
Introduces and examines concepts basic to the study of occupational therapy assistant.	
OTA 102 Occupational Therapy Art and Craft Techniques	3 Credits
Presents art, design and minor crafts used in occupational therapy treatment.	
OTA 103 Community Practicum	1 Credit
Provides opportunity for students to relate to community agencies and health disciplines.	
OTA 104 Applied Kinesiology	2 Credits
Analyzes human motion with emphasis on the range of motion and muscle strength related to occupational performance.	
OTA 105 Therapeutic Group Activities	3 Credits
Analyzes and demonstrates a variety of group activities used in occupational therapy treatment.	
OTA 201 Clinical Observation	1 Credit
Presents an overview of occupational therapy programs in a variety of facilities with emphasis on observational and note-writing skills and therapeutic use of self. Requires attendance at a weekly seminar.	
OTA 202 Disabling Psychiatric Conditions in Occupational Therapy	2 Credits
Reviews psychiatric disorders and the occupational therapy treatment for each as practiced by the occupational therapy assistant. Includes discussion of the clinical team approach, legal issues, nomenclature, clinical descriptions and etiology.	

OTA 203 Independent Living Skills 3 Credits

Provides supervised learning experiences in therapeutic treatment of daily physical and emotional living skills, work performance and play/leisure skills.

OTA 204 Occupational Therapy Techniques I 1 Credit

Provides supervised learning experience using woodworking as a therapeutic modality.

OTA 205 Medical Care I 3 Credits

Provides an interdisciplinary approach to the study of selected disease processes and conditions in all age groups. Includes a survey of the medical or surgical management of these conditions.

OTA 206 Therapeutic Activities 3 Credits

Provides supervised learning experiences in fiber crafts and ceramics.

OTA 207 Fieldwork Level I 1 Credit

Provides clinical observation and practice of occupational therapy skills and theory presented in previous and current courses in the curriculum. Requires attendance at a weekly seminar.

OTA 208 Occupational Therapy Assistant Theory I 2 Credits

Introduces the psychiatric occupational therapy process and the role of the occupational therapy assistant in assessment and treatment.

OTA 209 Occupational Therapy Assistant Theory II 3 Credits

Presents assistant-level theory for management of clinical physical dysfunction cases referred to occupational therapy. Includes initial screening, evaluation, planning and implementation of programs for patients/clients.

OTA 210 Therapeutic Adaptations 3 Credits

Provides supervised learning experiences in orthotics, prosthetics and assistive, adaptive equipment.

OTA 211 Clinical Management 2 Credits

Presents basic theory, techniques and skills necessary for management of an occupational therapy clinic. Emphasizes the impact of management on a clinical occupational therapist assistant position.

OTA 212 Medical Care II 3 Credits

Provides an interdisciplinary approach to the study of selected disease processes and conditions in all age groups. Surveys the medical or surgical management of these conditions.

Course Descriptions

OTA 213 Fieldwork Level 2-A & Experience in Occupational Therapy 1	2 Credits
Provides supervised clinical experience.	
OTA 214 Fieldwork Level 2-B & Experience in Occupational Therapy 2	2 Credits
Provides supervised clinical experience.	
PAR 102 Emergency Medical Technician—Basic Training	7.5 Credits
Requires laboratory practice and clinical observation in a hospital emergency room, nursing home and ambulance. Covers theories, techniques and operational aspects of pre-hospital emergency care within the scope and responsibility of the emergency medical technician (EMT). Prepares students for the state certification examination.	
PAR 106 Pre-hospital Environment	1.5 Credits
Introduces the legal, moral and ethical responsibilities of the health care professional. Provides an overview of the emergency medical services system and its components and relationships. Introduces potential medical liability and medical liability protection. Provides awareness of concepts of rescue and preparation for response to a scene/incident. Provides an overview of stress, reactions to stress, anxiety, paramedic job stress and dealing with death and dying.	
PAR 111 Preparatory	5.5 Credits
Introduces medical abbreviations, terminology, prefixes and suffixes and the use of a medical dictionary. Introduces general patient assessment and initial management, including scene survey, primary survey, resuscitation, secondary survey, history, definitive field management and re-evaluation. Emphasizes airway management, including airway anatomy and physiology, assessment, management, ventilation and suction. Provides an understanding of pathophysiology of shock and the care of shock or lack of oxygenation victims. Provides an overview of pharmacology, including drug information, action of drugs, weights and measurements and the administration and techniques for drug administration.	
PAR 202 Trauma	4 Credits
Overviews kinematics, primary survey, resuscitation, secondary survey and management, monitoring and transporting trauma victims. Defines parameters and discusses anatomy and physiology as related to burn injuries, present pathophysiology related to specific sources of burn injuries and present	

patient-related detail assessment and specific management of burns. Provides opportunities to practice and perform patient assessment, IV techniques and endotracheal incubation in emergency and operating rooms.

PAR 206 Medical**16.5 Credits**

Overviews anatomy, physiology and patient assessment. Emphasizes pathophysiology, respiratory disorders management, pharmacologic intervention and dysrhythmias recognition as they relate to cardiac care and the central nervous system. Discusses normal anatomy and physiology as related to the endocrine system and diabetes mellitus. Discusses the anatomy and physiology of the abdomen, genitourinary system and reproductive system, discusses anatomy and physiology as related to anaphylaxis. Discusses the etiology and treatment of toxicological emergencies. Emphasizes EMT-paramedic safety as related to infectious diseases. Covers the etiology and management of emergencies that result from exposure to the external environment. Emphasizes care of geriatric patients and pediatric patients with special consideration of the processes and problems specific to these two age groups. Introduces advanced cardiac life support techniques.

PAR 211 Obstetrics/Gynecology Neonatal**3.5 Credits**

Discusses the etiology and treatment of gynecologic emergencies, the normal and abnormal events in pregnancy and childbirth and the care of the neonate.

PAR 216 Behavioral Emergencies**7.5 Credits**

Discusses factors that may alter the emotional status of the ill or injured, communication techniques in managing an emotionally disturbed patient, removing bystanders from the scene, factors that increase the risk of suicide and behavior modifications. Describes the techniques useful in managing crisis situations in dealing with EMT-paramedic stress, in confronting an uncontrollable armed patient and restraining the patient. Discusses restraining or transporting a patient forcibly and communicating significant findings to the resource hospital. Participates in a field internship which provides on the job experience in all phases of pre-hospital advanced life support.

PHO 104 Basic Photography**3 Credits**

Covers basic black and white photographic theory and technique. Includes basic black and white darkroom processes and physics of light and filters. Studies camera and lenses, characteristics of films and papers, and the chemistry of emulsions, exposure and development.

PHO 106 Studio Practices**3 Credits**

Introduces studio work in black and white photography using continuous light sources. Covers basic set-up techniques and lighting methods for a variety of

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subject matter. Includes practice with photo flood lamps and quartz lamps, both floods and spot, and a variety of equipment used to modify light.

PHO 107 Intermediate Photography **3 Credits**

Develops advanced camera skills with medium and large format view cameras. Covers techniques for photographing in a variety of picture taking situations. Includes special darkroom techniques and processes. Emphasizes good composition and the use of photography as a communications tool.

PHO 109 Studio Lighting Techniques **3 Credits**

Covers techniques for multiple lighting set-ups, studio electronic flash, location lighting, special effects and large sets.

PHO 110 History of Photography **3 Credits**

Surveys technological, aesthetic, social and political changes that the medium of photography has undergone. Studies and recreates nineteenth century processes. Includes visits to historical archives to view prints.

PHO 201 Principles of Color Photography **3 Credits**

Develops camera and laboratory skills needed for color negative and color positive processes through work with state-of-the-art equipment and techniques. Encompasses color psychology and aesthetics as well as the physics and chemistry of color photography.

PHO 202 Advanced Process and Techniques **3 Credits**

Covers specialized techniques used by commercial photography labs such as masking internegatives, use of print film, litho film, production techniques and retouching.

PHO 203 Professional Portraiture **3 Credits**

Explores approaches and methods in traditional and alternative portraiture in studio and on-location photography. Emphasizes creative approaches to commercial portraiture.

PHO 204 Commercial Photography Techniques I **3 Credits**

Introduces studio and lab techniques used in advertising and industrial photography. Emphasizes creative problem solving and business communications.

PHO 205 Commercial Photography Techniques II **3 Credits**

Explores special techniques used in advertising and industrial photography such as those used in on-location product photos, products with models, food illustrations and multi-image slide presentations.

PHO 206 Special Projects 1 3 Credits

Accommodates student interest in specific areas of their field or in areas where there is a need to strengthen skills. Requires performance and completed work to be portfolio quality and reflect applicability to the main areas of design, production and/or illustration.

PHO 207 Special Projects II 3 Credits

Provides specific experiences in selected areas. Requires instructor approval prior to project work.

PHO 208 Independent Study 1 3 Credits

Provides students with opportunities to design a project for specific areas. Requires students to develop a plan to show what the project outcome/results will be. Restricts work to the program area and must be portfolio quality.

PHO 209 Independent Study 2 3 Credits

Provides students with the opportunity to develop skills in specific areas of a visual communications program or to elect a course from the college curriculum which supports a career in their chosen program. Requires program chairperson approval to elect non-program course work. Requires instructor approval for program projects.

PHO 214 Journalistic and Editorial Photography 3 Credits

Gives students the opportunity to photograph events and human interest features to gain experience in contributions to various publications. Emphasizes establishing visual relationships in the photo essay.

PHO 215 Advanced Portraiture 3 Credits

Further exploration of advanced approaches to portraiture. Emphasis is on creativity and quality.

**PHO 216 Advanced Processes and Production
Techniques 3 Credits**

Introduces specialized lab techniques in traditional and digital formats. Works with contemporary experimental darkroom techniques. Covers issues in prepress production as they relate to the photographer. Teaches halftone and color separation techniques as well as the use of typography with photographs.

PHO 217 Fashion Photography 3 Credits

Introduces the field of fashion photography with emphasis on commercial application.

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PHO 218 Fine Art Photography 3 Credits

Examines current issues in non-commercial photography. Explores attitudes of photographers and critics on a wide range of topics through directed reading, class discussion and gallery visits.

PHO 220 Sensitometry 3 Credits

Estimates response of photographic materials to radiant energy, including methods of exposing, processing, measurement and data evaluation.

PHO 222 Electronic Photography 3 Credits

Examines the area of still video photography and various electronic darkroom software packages. Includes editing processes, manipulating images in black-and-white and color and working with various output devices.

PMT 101 Introduction to Plastics 3 Credits

Introduces plastic processing industries, techniques and commonly used polymers.

PMT 106 Introduction to Polymer Science 3 Credits

Introduces structure, properties and processing characteristics of plastic polymers and additives.

PMT 107 Injection Molding 3 Credits

Expands student knowledge of the injection molding process, components and industry.

PMT 108 Extrusion Processes 3 Credits

Introduces the extrusion process, equipment and industrial applications.

PMT 201 Advanced Injection Molding 3 Credits

Covers the procedures and techniques necessary to fully utilize the capabilities of modern injection molding equipment to properly process thermoplastic materials.

PMT 202 Advanced Extrusion 3 Credits

Covers the procedures and techniques necessary to fully utilize the capabilities of modern extrusion equipment to properly process thermoplastic materials.

PMT 206 Plastics Material Testing 3 Credits

Covers state-of-the-art chemical, physical and mechanical testing. Includes ASTM, UL, SAE and other agency criteria now used in engineering design data bases.

PMT 208 Computer Applications in Plastics 3 Credits

Introduces the computer products and services available to aid in the design and manufacturing of plastic products.

PMT 209 Manufacturing of Plastics Products 3 Credits

Discusses the economic, organizational and quality control strategies employed for efficient production of plastics. Introduces the major secondary finishing, decorating and joining techniques. Develops an understanding of the practical considerations of manufacturing operations.

PNU 101 Foundations of Nursing 4 Credits

Presents the goals and the role of the licensed practical nurse on the health care team. Covers concept of the nursing process as practiced within the wellness/illness continuum. Includes basic nursing care, and data collection and recording.

PNU 102 Therapeutic Measures 3 Credits

Focuses on preventive, therapeutic and rehabilitative nursing interventions requiring advanced skills and knowledge. Integrates the nursing process and the role of the practical nurse.

PNU 103 Holistic Approach to Health 2 Credits

Introduces the holistic approach to practical nursing. Includes holistic aspects of care, the wellness/illness continuum and therapeutic relationships.

PNU 104 Nutrition 2 Credits

Covers basic principles of nutrition and diet therapy in wellness and illness for various age groups. Considers socio-economic, ethnic and religious factors related to diet. Emphasizes the role of the practical nurse in assisting patients in meeting nutrition needs.

PNU 105 Introduction to Clinical Nursing 3 Credits

Provides students with opportunities to implement basic nursing skills in the clinical setting. Emphasizes the hygienic and comfort needs of the adult patient and focuses on developing basic assessment skills utilizing the nursing process. Stresses concise, accurate documentation of assessment and care.

PNU 106 Anatomy and Physiology for Practical Nursing 5 Credits

Presents structure and function of the human body. Examines the physical and chemical factors enabling humans to interact and maintain internal balance. Integrates fundamental wellness/illness relationships.

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PNU 107 Cardiopulmonary Nursing 3 Credits

Utilizes the nursing process in understanding the pathophysiology and nursing care of patients with cardiovascular/ventilation needs. Emphasizes developing the nurse as a communicator and care giver with a holistic approach.

PNU 108 Endocrine/Genitourinary Nursing 3 Credits

Utilizes the nursing process in understanding the pathophysiology of hormonal imbalances and urinary elimination needs. Emphasizes developing the nurse as a communicator and care giver with a holistic approach, identifying community supports for patients and developing patient awareness of healthful lifestyles.

PNU 109 Gastrointestinal/Sensorimotor Nursing 3 Credits

Utilizes the nursing process in understanding the pathophysiology of digestion, elimination, mobility and sensorimotor needs. Develops the nurse as a communicator and care giver with a holistic approach. Covers patient psychosocial needs and opportunities for support through community agencies.

PNU 110 Introduction to Pharmacology for Practical Nursing 2 Credits

Introduces the concept of meeting biopsychosocial needs through drug administration within the preventive, therapeutic and rehabilitative environment. Defines practical nurse responsibilities in medication administration. Assesses patient wellness/illness status.

PNU 111 Pharmacology for Practical Nurses 2 Credits

Surveys common pharmacologic agents. Develops drug therapy as one aspect of preventive, therapeutic and rehabilitative care of patients.

PNU 112 Medical/Surgical Clinical Nursing I 3 Credits

Correlates medical surgical content and nursing practice. Includes decision making within the practical nurse role. Emphasizes the holistic aspects of individuals along the wellness/illness continuum.

PNU 113 Medical Surgical Clinical Nursing II 2 Credits

Correlated theory to the holistic care of the adult. Implements the nursing process in preventative, rehabilitative and therapeutic care. Identifies the role of the Practical Nurse providing care within the environment at an advanced level.

PNU 114 Nursing Issues & Trends 1 Credit

Covers organizational patterns and the role of the licensed practical nurse in the health care delivery system. Emphasizes continuing education as a means

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for maintaining competencies. Includes ethical, legal and historical aspects to develop awareness of privileges, obligations and responsibilities of the practical nurse.

PNU 115 Gerontology 3 Credits

Focuses on the normal aging process along the wellness/illness continuum in later life. Surveys trends in preventive, rehabilitative and therapeutic care.

PNU 116 Geriatric Clinical Nursing 3 Credits

Correlates gerontologic content with holistic care of the older adult. Implements nursing process within the role of the practical nurse to prevent illness or to maintain, promote and restore health.

PNU 117 Maternal/Child Nursing 3 Credits

Examines conditions and selected interventions based on the nursing process in providing preventive, rehabilitative and therapeutic care for the mother and child. Identifies the role of the licensed practical nurse in providing holistic care within a dynamic environment.

PNU 118 Maternal/Child Clinical Nursing 3 Credits

Correlates maternal/child content with holistic care of the mother and child. Emphasizes the normal maternity cycle and normal growth and development of the child within the wellness/illness continuum.

PNU 281-293 Special Topics in Practical Nursing 1-5 Credits

Provides the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact the chief academic officer for more information.

PST 120 First Responder 4 Credits

Provides students with information necessary to recognize emergency situations, know the proper course of action with different types of emergencies and apply appropriate first aid. Addresses handling of victims of hazardous materials accidents. Covers CPR, including one and two rescuer, and adult, infant and child resuscitation.

PST 121 Industrial Safety and Loss Prevention 3 Credits

Introduces occupational safety and health standards and codes with emphasis on applications of codes to typical work situations and MSDS requirements. Includes emergency first aid, safety protection, eye protection and chemicals handling. Covers employer and employee rights as well as violations, citations, penalties, variances, appeals and record keeping.

Course Descriptions

PST 220 Incident Management Systems 3 Credits

Emphasizes the command and control of major department operations at an advanced level, linking operations and safety. Areas of study include incident management systems, pre-incident, size-up, command systems, sectoring functions, staging, safety officer, command post, communications, news media, and computer aided resources. Utilizes simulated incidents requiring the applications of appropriate solutions.

PST 221 Design and Planning for Prevention and Protection 3 Credits

Focuses on the needs and uses of the computer in public safety. Includes computer-aided dispatch, advanced levels of cameo, I-Chiefs, computer-aided design of equipment, generation of incident reports, application of computers for the budgetary process, computer-aided resource and materials, maintenance, test records of vehicles and the GIS program.

PST 222 Industrial Loss Prevention 3 Credits

Provides the student with a comprehensive study of the Code of Federal Regulations 29-1910. Covers the General Industry Standards Subparts A to Subparts R. Includes the responsibility of a safety department within industry and the emphasis placed on the Code of Federal Regulations. Emphasizes the need for proper record keeping and reporting to the Indiana Occupational Safety and Health Administration. Focuses on safety and the steps needed to administer a quality program.

PST 281-293 Special Topics in Public Safety 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

QSC 101 Quality Control Concepts and Techniques I 3 Credits

Covers current quality control concepts and techniques in industry with emphasis on modern manufacturing requirements.

QSC 102 Statistical Process Control 3 Credits

Studies the fundamental tools of statistical process control which are used in industry to reduce costs and increase productivity at a predictable quality level. Emphasizes principles and techniques of statistical process control to ensure that prevention instead of detection of problems is practiced. Includes basic statistical and probability theory, sampling techniques, process control charts, the nature of variation, histograms and attribute and variable charts.

QSC 201 Advanced Statistical Process Control 3 Credits

Builds on the basic principles of QSC 102 with advanced techniques by industry to ensure economic production of goods based on defect prevention rather than defect detection. Covers the various decisions to modify, change or adjust processes based on statistical evidence. Stresses interpretation of statistical data and distinguishing between common and special causes of problems. Emphasizes appropriate use of control charts, trend analysis, assessing process and machine capability, evaluating the measurement process, using computers, and automated data collection systems and implementation techniques.

QSC 202 Quality Control Concepts and Techniques II 3 Credits

Continues QSC 101. Acquaints students with quality control systems. Emphasizes the systems approach to quality, establishing the quality system and applying total quality control in the company.

QSC 203 Metrology 3 Credits

Covers techniques of linear and angular measurement and applications for industrial processes and quality control.

QSC 204 Total Quality Management 3 Credits

Teaches the philosophy of total quality management. Focuses on improving processes and reducing variation in systems. Covers management's role in improving aspects of manufacturing and service organizations to achieve quality improvement.

QSC 210 Quality Management Principles 3 Credits

Stresses the management concept relating to employee attitudes, motivation and job satisfaction, as well as philosophies, styles of leadership, and team building as they relate to quality objectives.

QSC 281-293 Special Topics in Quality Science 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

RAD 101 Orientation and Nursing in Radiologic Technology 3 Credits

Covers seven units. Introduces radiology and prepares students for entry into a clinical setting.

RAD 102 Principles of Radiographic Exposure 4 Credits

Presents individual and group characteristics needed to produce the ideal radiograph. Includes knowledge of interchangeability of mAs, kVp, film/

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screen combinations, distance and grids. Covers factors and considerations needed for pediatric techniques, calibration, heat unit calculation and technique chart construction.

RAD 103 Radiographic Positioning I 3 Credits

Correlates positioning, terminology, techniques and film critique with the examinations of chest, abdomen, upper extremity, upper/lower GI tracts and urinary tract.

RAD 104 X-Ray Clinical Education I 5 Credits

Follows category 2 of the competency lab model, which tests proficiency of skills from categories 1 and 2. Includes supervised clinical experience.

RAD 105 Radiographic Positioning II 3 Credits

Correlates all previous material related to anatomy and positioning, covers the areas of lower extremities, spine and thorax, and advances knowledge in ethics and quality assurance.

RAD 106 X-Ray Clinical Education II 5 Credits

Includes supervised clinical experience, utilizes category 2 of the competency model, tests proficiency of skills from categories 1 and 2.

RAD 107 Radiation Physics 3 Credits

Introduces physics as utilized in the production of X-rays. Includes laws of physics pertaining to atomic structure, chemical properties and reactions and electrical circuitry. Covers equipment and methods of generation and measurement of electricity.

RAD 108 Radiographic Quality Assurance 2 Credits

Presents theories and practices pertaining to the establishment of department exposure standards. Includes equipment tests for reliability, problem solving, reject analysis and cost containment. Provides hands-on experience in processor monitoring, record keeping and radiographic quality control tests.

RAD 109 Imaging Techniques 2 Credits

Covers theories, principles and demonstrations of current imaging modalities.

RAD 110 Technical Math for Health Occupations 3 Credits

Provides basic instruction in technical mathematics for students in health occupations. Includes review of arithmetic, basic concepts of algebra, graphing, geometry and logarithms.

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RAD 201 Radiographic Positioning III 3 Credits

This course correlates positioning terminology and techniques, film critique, with exams of Category 2 of the competency model, testing skills from Category I and II.

RAD 202 X-Ray Clinical Education III 8 Credits

Introduces Category 3 of the Competency Model, proficiency testing over Categories 1 and 2 and testing over Category 3.

RAD 203 X-Ray Clinical Education IV 8 Credits

Introduces Category 4 of the Competency Model in lab proficiency testing of skills from Categories 1, 2, 3 and proficiency in Category 4.

RAD 204 X-Ray Clinical Education V 8 Credits

Includes final competency testing for students who have not completed clinicals 1-4. Continues maintenance over all categories. Includes experienced clinical.

RAD 205 Pathology for Radiologic Technology 2 Credits

Examines basic concepts concerning disease, its causes and the resulting changes as viewed radiographically. Emphasizes needed technical changes to produce optimal radiographs from correlations to patient symptoms.

RAD 206 Radiobiology and Radiation Protection 3 Credits

Covers theories and principles of the effects of ionizing radiation upon living tissues. Includes dosages, measurements, DNA structure and function and cellular radio sensitivity.

**RAD 208 Principles of Radiographic Exposure II and 2 Credits
Quality Assurance**

Continues Principles of Radiographic Exposure I. Explains photo timing and its relationship to manual techniques. Associates kVp and mAs with the quality and quantity of radiation. Covers standard darkroom procedure, automatic processing and quality assurance.

RAD 209 Radiographic Positioning IV 2 Credits

Covers all positions involving radiographic examinations.

**RAD 288 Pharmacology and Routes of Administration 3 Credits
for Radiologic Technologists**

Surveys common pharmacologic agents, including emergency drugs, contrast media, measurements, dosages, actions, contra-indications, allergic reactions and routes of administration.

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RAD 299 General Exam Review	3 Credits
Reviews content of program, emphasizing anatomy, physics, exposure principles, positioning and radiation safety. Simulated Registry exams prepare the student for the American Registry of Radiologic Technologist Examination.	
RES 101 Respiratory Care Science 1	3 Credits
Presents a history of respiratory care, principles/practices of oxygen administration, equipment cleaning and sterilization techniques, and gas analyzers. Includes patient care needs, asepsis, body mechanics, physical assessment, isolation techniques, medical terminology and medical records. Emphasizes safety. Presents basic principles of physics as applied in respiratory care.	
RES 102 Respiratory Care Science 2	3 Credits
Presents principles and practices of oxygen administration, gas blenders, humidity and aerosol therapies and environmental therapy. Introduces manual resuscitators, maintenance of artificial airways, hyperinflation and addresses selected aspects of ethical practice.	
RES 103 Respiratory Care Science 3	3 Credits
Studies medicinal aerosol therapy and respiratory pharmacology, hyperinflation therapies, pulmonary rehabilitation and home care. Introduces basic bedside pulmonary function testing. Presents aspects of ethical and legal respiratory practices.	
RES 104 Critical Care I	3 Credits
Introduces respiratory care of critically ill patients. Studies arterial blood gas collection, analysis and interpretation, and basic medical laboratory data. Introduces concepts and techniques of critical respiratory care of adults and pediatrics, including establishment and maintenance of artificial airways. Studies adult and pediatric mechanical ventilators and related cardio-pulmonary monitoring equipment.	
RES 105 Cardiopulmonary Physiology	3 Credits
Studies the cardiopulmonary system including ventilation, perfusion and gas exchange; introduces arterial blood gases, acid base regulation and physiologic monitoring.	
RES 106 Clinical Medicine	3 Credits
Introduces etiology, symptomatology, diagnosis, therapeutics and prognosis of selected pulmonary diseases.	

RES 108 Clinical Practicum 1 3 Credits

Introduces the student to the hospital environment. Exposes students to various hospitals and respiratory care departments, patient charts, patient identification and communication within the hospital. Provides supervised experience in oxygen therapy, hyperinflation therapy, humidity/aerosol therapy and charting.

RES 109 Clinical Practicum 2 3 Credits

Provides supervised experience in selected therapeutic modalities. Includes an introduction to chest physiotherapy, medicinal aerosol therapy, intermittent positive pressure breathing and ultrasonic therapy. Requires continuing certification in CPR.

RES 110 Clinical Practicum 3 3 Credits

Provides additional supervised experience in selected therapeutic modalities. Includes an introduction to basic cardiopulmonary testing and mechanical ventilation. Requires certification in CPR.

RES 111 Clinical Practicum 4 3 Credits

Provides additional supervised experience in selected therapeutic modalities. Includes advanced patient assessment, clinical experience in adult critical care, arterial blood gas analysis and airway care. Requires continuing certification in CPR.

RES 112 Clinical Practicum 5 3 Credits

Provides additional supervised experience in selected therapeutic modalities. Includes advanced patient assessment, clinical experience in adult critical care, arterial blood gas analysis and airway care. Requires continuing certification in CPR.

RES 201 Respiratory Care Science 5 3 Credits

Includes in-depth approaches to the respiratory care management of critically ill neonatal, pediatric and adult patients. Emphasizes techniques of patient evaluation, monitoring, transportation and management.

RES 202 Respiratory Care Science 6 3 Credits

Covers advanced techniques of mechanical ventilation of neonatal, pediatric and adult patients. Includes advanced techniques of patient assessment through pulmonary function testing and other selected assessment techniques.

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RES 203 Pathophysiology and Monitoring	3 Credits
Includes etiology, symptomatology, diagnosis, therapeutics and prognosis of disease conditions related to respiratory care, including relationships of body systems. Covers various equipment, techniques of data collection, interpretation and evaluation of data used in monitoring the cardiopulmonary system.	
RES 205 Clinical Practicum 6	3 Credits
Provides additional supervised experience in selected therapeutic modalities. Includes advanced cardiopulmonary diagnostic techniques, application of invasive and non-invasive monitoring of the cardiopulmonary system and experience in respiratory care departmental management and quality assurance roles. Also includes advanced clinical experience in adult, pediatric and neonatal critical care. Continuing certification in CPR is required.	
RES 210 Cardiopulmonary Diagnostics	3 Credits
Presents in-depth approaches to the respiratory care management of critically ill neonatal, pediatric and adult patients. Emphasizes techniques of patient evaluation, cardiopulmonary monitoring, transportation and management. Includes advanced techniques of patient assessment through pulmonary function testing and other selected assessment techniques.	
RES 211 Critical Care II	3 Credits
Presents advanced techniques of mechanical ventilation of the neonatal, pediatric and adult patient.	
RES 215 Clinical Medicine II	3 Credits
Studies etiology, symptomatology, diagnosis, therapeutics and prognosis of disease conditions related to respiratory care and the relationships of body systems.	
RVT 101 Introduction to RV Service/Customer Relations	2 Credits
Covers the use of basic hand tools and equipment used in the repair of recreational vehicles. Discusses service and safety practices, technician liability, applicable laws, service documentation and manuals. Examines RV classifications, industrial codes and standards. Covers techniques, insights and pertinent knowledge needed to foster positive relationships with customers, as well as situations and remedies for dealing with dissatisfied customers.	
RVT 102 Electrical Concepts	3 Credits
Acquaints students with fundamentals of AC/DC electricity and circuitry related to troubleshooting and repair of recreational vehicles. Studies the use of test equipment and identification of component symbols and applies them to actual RV systems and appliances.	

RVT 103 Fluid Power, Heat and Mechanical Systems 4 Credits

Provides an overview of pneumatic and hydraulic power generation, controls and actuation devices found in recreational vehicles. Includes an introduction of the basic principles of gears, levers, pulleys and their application to simple machines. Studies the effects and application of heat on solids, liquids and gases.

RVT 104 LP Gas 2 Credits

Addresses LP gas fundamentals, properties and safety as used in troubleshooting and repair of RV systems within industry and governmental codes and standards. Encompasses the use of test equipment and identification of component symbols and applies them to actual RV systems and appliances.

RVT 105 RV Electrical Systems Service 5 Credits

Provides necessary skills and knowledge to troubleshoot, repair and/or replace AC/DC circuitry, components and auxiliary systems in recreational vehicles.

RVT 106 RV Braking, Suspension and Towing Systems 3 Credits

Covers the operation, troubleshooting, repair and/or replacement of electric brakes, suspension and towing systems in all types of recreational vehicles. Studies actual RV systems and appliances. Includes appropriate mathematical formulae.

**RVT 107 RV Air Conditioning and Absorption
Refrigeration Service 4 Credits**

Acquaints students with absorption refrigeration principles, troubleshooting and repair utilizing actual RV systems and appliances. Studies inspection, maintenance and replacement techniques.

RVT 108 RV Accessor, Furnace, Water Heater 3 Credits

Covers theory of operation, diagnosis and troubleshooting techniques and procedures for repair and/or replacement of heating systems and various after-market accessories.

RVT 109 Water Systems and Water Heating 2 Credits

Covers theory of operation, diagnosis and troubleshooting of water systems and water heaters.

RVT 110 Interior Coach 3 Credits

Deals with installation, troubleshooting, repair and/or replacement of interior cabinetry, furniture, hardware, paneling, ceilings, flooring, floor coverings, upholstery, soft goods, doors and other interior components. Demonstrates and applies basic skills related to working with wood, plastics and fabrics.

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RVT 111 Exterior Coach 4 Credits

Details structural characteristics of various types of recreational vehicles. Provides skills and knowledge necessary to repair, recover and reseal exterior sidewalls and roofs. Demonstrates and applies techniques for locating and repairing water and air leaks, windows, basic body repair, touch-up and painting.

RVT 112 Pre-Delivery and Preventive Maintenance 2 Credits

Provides techniques and procedures to ensure proper pre-delivery preparation for new units. Covers inspection, periodic checks and adjustments, and fluid, filter and belt replacements. Utilizes actual vehicles and components.

RVT 201 Metal Processing and Metallurgy 2 Credits

Covers applications of welding and the study of metals utilized in the RV service industry. Discusses and applies the use of sheet metal tools, layout, cutting, forming and fastening.

RVT 204 Internship 7 Credits

Provides in-shop, hands-on study within the RV service community. Requires students to perform all phases of RV service and repair under the supervision of a qualified technician or service manager.

SPC 103 Employee Participation Techniques & Quality Improvements 3 Credits

Provides an overview of the development of an employee involvement program such as circle, team, group and other concepts. Includes problem-solving techniques of brainstorming, cause and effect diagrams, data gathering, check sheets, Pareto analysis, central location, frequency distribution and histograms. Covers the role of management and employees in the process and their relationship to participative management.

SPC 104 Introduction to Non-Destructive Testing 2 Credits

Acquaints students with the principles and various types of non-destructive examination methods, their advantages, limitations and applications.

SPC 105 Non-Destructive Testing Applications I 2 Credits

Presents an overview of the relationship of non-destructive testing to the total quality function. Includes advantages and limitations of various test methods.

SPC 106 Non-Destructive Testing Applications II 2 Credits

Covers theoretical and practical aspects of non-destructive testing in radiography, eddy current testing, acoustic emission and leak testing.

SPC 108 Quality Control Engineering Principles and Technologies 3 Credits

Presents principles and techniques of modern quality control engineering with attention to management, engineering, economic and production factors.

Emphasizes the assurance of quality at the hardware, processing and system levels.

SPC 109 Engineering Materials 2 Credits

Includes the basic principles of metallurgy and the properties of materials in the section of parts and manufacturing processes. Explores the ways in which the strength and hardness of metals can be altered by heating and cooling.

Examines ceramics, composites, polymers and other exotic metals.

SPC 110 Quality Control Engineering Theory and Application 3 Credits

Presents current theory and applications of quality engineering for assurance and verification of product quality at the hardware, processing and system levels. Emphasizes statistical analysis, laboratory experiments, and tests and case problem-solving applications.

SPC 111 Reliability Objectives 3 Credits

Introduces the development and principles of reliability engineering. Establishes the mathematical and physical bases of reliability and applies the basic elements of reliability data analysis. Surveys concepts basic to modern reliability requirements with emphasis on practical applications in manufacturing processes and production operations.

SPC 112 Reliability Techniques 3 Credits

Studies reliability techniques and applications designed to obtain or improve reliability analysis.

SPC 201 Analysis of Metallurgical Failure 3 Credits

Study of the factors responsible for the failure of components or structures, which may be motivated by either sound engineering practice or by legal considerations. Covers the proper application of failure analysis techniques to provide valuable feedback to design problems and materials limitations.

SPC 202 Process Control Gauging and Measurements 3 Credits

Deals with the science of measurement for obtaining accurate and reliable data using computerized statistical process control and mechanical metrology.

Includes selection of various instruments for specific applications.

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SPC 203 Codes, Specifications and Procedures 3 Credits

Interpretations

Explores the different types of codes, specifications and procedures used in modern industry and provides opportunity for use and interpretation. Blueprint reading is included.

SPC 204 Statistical Concepts and Techniques 3 Credits

Presents various topics pertaining to statistical applications of quality control including frequency distribution, probability theory and application, and sampling techniques.

SPC 205 Nondestructive Testing 3 Credits

Presents an overview of the relationship of nondestructive testing to the total quality function. Attention is given to the advantages and limitations of various test methods.

SPC 206 Mechanical Metrology 3 Credits

Provides instruction and laboratory experiments in the use of mechanical testing and measurement equipment for quality control.

SPC 207 Electrical Metrology 3 Credits

Offers instruction and laboratory experiment in the use of electrical testing and measurement equipment for quality control.

SUP 102 Techniques of Supervision I 3 Credits

Introduces basic employee development with emphasis on the responsibilities of a newly-appointed supervisor. Emphasizes organizational structure, motivation, delegation of authority, interviews, orientation and induction of new employees, employee performance evaluations and dealing with employee conflict.

SUP 103 Industrial Safety I 3 Credits

Covers the day-to-day responsibilities of management and supervision toward attaining an accident-free organization. Emphasizes first aid, fire prevention and control, safety procedures in starting and stopping machines, accident investigations and other preventive measures. Covers methods of advertising good safety practices and rules of plant protection in relation to safety and OSHA.

SUP 104 Techniques of Supervision II 3 Credits

Develops skills for effective supervision of employees by utilizing analysis of cases, group discussion, in-basket exercises and role-playing. Includes

problem-solving techniques, labor relations, legal guidelines, policy making, counseling troubled employees, effective communications and human relations skills.

SUP 202 Production Planning and Control 3 Credits

This course emphasizes production planning concepts and inventory control techniques and applications. Areas of concentration include the production function, design and development of products/services, inventory management and quality control.

SUP 203 Reliability Objectives 3 Credits

Introduces development and principles of reliability engineering. Establishes mathematical and physical bases of reliability and applies basic elements of reliability data analysis. Surveys concepts basic to modern reliability requirements with emphasis on practical applications in manufacturing processes and production operations.

SUP 204 Mechanical Metrology 3 Credits

Provides instruction and laboratory experiments in the use of mechanical testing and measurement equipment for quality control.

SUP 205 Techniques of Leadership 3 Credits

Identifies approaches to effective leadership and discovers an appropriate personal leadership style. Explores specific qualities and skills needed for conference leadership (organizing, facilitating, controlling, summarizing, speaking and problem defining and solving).

SUP 206 Time and Motion Study 3 Credits

Examines industrial applications of time and motion studies in establishing rates.

SUP 208 Materials Handling 3 Credits

Applied stresses and quality controls pertaining to the handling and storing of industrial materials. Gives attention to shelf life of materials, weight and mass configuration and specifications of vendors' materials.

SUP 210 Case Problems in Management 3 Credits

Applies quantitative and qualitative skills to case study problems in management. Presents solutions which demand planning, leadership and financial analysis.

Course Descriptions

SUP 211 Labor Relations 3 Credits

Examines labor laws and practices pertaining to industrial relations. Covers development and application of laws, mediation, conciliation, collective bargaining, arbitration and handling of grievances.

SUP 212 Manufacturing Organ I 3 Credits

Presents the organization of a typical manufacturing operation with attention to functional components and their interrelationships. Reviews organizational principles as they apply to the operation and examines the duties and responsibilities of the first-line supervisor. Develops the basic tools of managerial decision-making and applies them to typical case problems.

SUP 213 Manufacturing Organ II 3 Credits

Explores quality control, research, development, marketing, production, inventory control, personnel and maintenance functions. Involves forms of ownership, analysis of financial data, capital investment and budgeting.

SUP 214 Industrial Safety II 3 Credits

Establishes procedures following an accident. Covers the preparation and maintenance of accident records, severity rates, workers' compensation and insurance claims. Shows how effective safety programs are managed in compliance with the law and contractual agreements.

SUP 215 Purchase and Inventory Control 3 Credits

Discusses a practical approach to procurement of materials with regard to price, quality, quantity. Examines the purchasing department's place in the organizational structure. Defines responsibility of the purchasing department and its relationship to other departments, legal aspects, ethics and standards as they relate to procurement.

SUP 216 Traffic and Transportation Management I 3 Credits

Covers transportation systems, federal regulations, freight classification, rates, tariffs and claims.

SUP 224 Operations Management 3 Credits

Studies the efficient production of goods and services that will satisfy the wants and needs of identified customer groups. Focuses on the acquisition of the factors of production, efficient use of those factors and distribution of the output of the production process. Includes discussion of the need for quality and its measurement.

SUR 101 Surgical Techniques 3 Credits

Introduces principles of sterile techniques and the operative care of the surgical patient. Includes the roles of scrubbing and circulating duties.

SUR 102 Surgical Procedures 1 3 Credits

Provides orientation to the role of a surgical technologist. Introduces the surgical facility, aseptic technique and basic surgical procedures with review of total patient care, including pre-operative care, diagnostic test and immediate post-operative care.

SUR 103 Fundamentals of Surgical Technology 6 Credits

Demonstrates and supervises practice of general surgical procedures. Correlates theory to clinical by requiring students to actively participate as members of the surgical team. Includes laboratory and clinical experiences.

SUR 104 Surgical Procedures 2 6 Credits

Studies advanced surgical procedures in relation to the total physiological aspects of surgical intervention. Includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure and a review of total patient care.

SUR 105 Clinical Applications 1 9 Credits

Correlates basic principles and theories of advanced surgical procedures to clinical performance in affiliating hospitals. Includes knowledge, skills and attitudes necessary for successful implementation of safe patient care in an operating room.

SUR 106 Surgical Procedures 3 3 Credits

Studies specialized surgical procedures. Includes a knowledge of the involved anatomy, existing pathology, surgical hazards encountered, the surgical procedure and a review of total patient care.

SUR 107 Clinical Applications II 8 Credits

Correlates principles and theories of specialized surgical procedures to the clinical performance in affiliating hospitals. Includes the knowledge, skills and attitudes necessary for successful implementation of safe patient care in an operating room.

TEC 101 Manufacturing Processes 3 Credits

Provides a basic survey of manufacturing processes, tools and equipment used by modern industry to convert bars, forgings, castings, plates and sheet materials into finished products. Includes basic mechanics of materials removal and forming, metrology, quality control and safety of operations. Introduces non-traditional manufacturing techniques.

Course Descriptions

TEC 102 Technical Graphics 3 Credits

Strengthens basic drafting skills to a proficient technician level. Includes orthographics projections with auxiliary views, dimensioning, sectioning and introductory tolerancing. Studies isometric and oblique views of parts.

TEC 104 Computer Fundamentals for Technology 3 Credits

Provides an introduction to microcomputer hardware, applications and software. Emphasizes computer literacy, disk operating systems (DOS), computer programming and industrial orientation. Surveys commonly used microcomputer applications.

TEC 106 Hazardous Materials and Control 3 Credits

Introduces hazardous materials, managing hazardous material incidents, explosive and gas emergencies, shipping containers, cylinder safety devices, responding to flammable and combustible liquids, oxidizers, poisons and corrosive and radioactive emergencies. Emphasizes chemical identification, marking, storage, shipping and handling hazardous substances. Uses basic monitoring instruments for hazardous areas to protect workers and first responders. Covers protective clothing and equipment. Emphasizes safety.

TEC 113 Basic Electricity 3 Credits

Studies electrical laws and principles pertaining to DC and AC circuits. Includes current, voltage, resistance, power, inductance, capacitance and transformers. Stresses the use of standard electrical tests, electrical equipment and troubleshooting procedures. Emphasizes safety procedures and practices.

VID 101 Audio/Video Systems Theory 3 Credits

The theory and practices of electronic systems as related to audio and video recording and playback systems. Students will learn about amplification, modulation, equalization and signal processing.

VID 102 Media Technology 3 Credits

Provides hands-on experiences in set-up, maintenance and utilization of AV equipment such as film projection systems, overhead projectors, audio and video playback and recording systems and 35mm projection systems.

VID 104 Studio I 3 Credits

Provides knowledge and studio practices necessary to successfully perform sound recording, editing and narration. Includes skill development in selecting microphones for specific use and basic audio mixing.

VID 105 Video Production I 3 Credits

Covers video recording systems, systems design and videography for post-production editing. Includes studio lighting, hidden miking, audio dubbing,

titling and supportive production procedures such as inter-connecting equipment, operating video cameras and proper video recorder operation.

VID 106 Production Planning 3 Credits

Focuses on knowledge and skills needed to prepare objectives, audience analysis, and overall planning for video and audio productions. Develops visual flow and continuity, and applies principles of visual design to video storyboards. Includes coordinating audio cues to visual action.

VID 107 Video Production II 3 Credits

Includes remote video shoot planning such as location scouting and site preparation. Includes projects in lighting, miking, camera and recorder setup, and on-location directing.

VID 109 Studio II 3 Credits

Covers theory and application of multiple track audio recording. Includes hands-on studio practice in electronic reverberation, parametric equalization and audio special effects. Focuses on timing, pacing and stereo imaging in mixdown.

VID 110 Studio III 3 Credits

Covers techniques and procedures in electronic video tape editing. Includes assemble and insert editing, audio dubbing, lip sync and microprocessor controlled editing. Covers rollback and time code editing systems with emphasis on the advantages and processes of each system as related to audio and video signal.

VID 202 Video Production III 3 Credits

Combines all aspects of video production for a comprehensive program including budgeting, procedures for staff assignments and techniques of client relations. Includes generation of computer graphics, real-time animation and electronic image enhancement.

VID 204 Special Projects I 3 Credits

Accommodates student interest in specific interest areas. Requires performance and completed work to be portfolio quality and reflect applicability to the main areas of student program.

VID 205 Special Projects II 3 Credits

Provides specific experience in selected areas, which may be combined or concentrated. Recommends completion of at least two projects. Requires instructor approval for additional projects.

Course Descriptions

VID 206 Independent Study I 3 Credits

Provides the opportunity to design a project for a specific program area. Includes development of project plan and expected outcomes. Restricts work to student program area and must be portfolio quality.

VID 207 Independent Study II 3 Credits

Provides opportunity to develop skills in specific areas of a visual communications program or to elect a course from the college curriculum which is supportive of a career in a chosen program. Includes computer programming, marketing, advertising and an externship or supervision with approval from program chairperson. Requires instructor approval for program projects.

VID 280 Co-op/Internship 1-6 Credits

Provides students with the opportunity to work at a job site that is specifically related to their career objectives. Provides on-the-job experience while earning credit toward an associate degree.

VID 281-293 Special Topics in Video Technology 1-5 Credits

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

VIS 101 Fundamentals of Design 3 Credits

Investigates design theory and color dynamics as applied to organizing the visual field. Provides experiences in applying design theory.

VIS 102 Fundamental of Imaging 3 Credits

Introduces students to a full range of image input technology including conventional 35mm photography, still video capture, video camcorder and computer scanners.

VIS 103 Introduction to Multi-Media 3 Credits

Explores various software programs involved in creating multi-media presentations, digital movies, digital animation and analog video output.

VIS 115 Computer Graphics 3 Credits

Introduces students to the computer's use in graphic design. Focuses on basic computer terminology and use, mastering fundamental skills and developing efficient working styles. Develops skills by creating publications with page layout software.

VIS 201 Electronic Imaging 3 Credits

Examines the area of still video photography and various electronic darkroom software packages. Provides experience with the electronic darkroom environment including editing processes, manipulation of images in black and white and color, and working with various output devices. Discusses four-color separations and pre-press procedures.

VIS 202 Color Prepress 3 Credits

Examines the technical specifications, translation issues, various output options and trouble shooting of graphic files for high end printing processes. Studies and compares the roles of the electronic production artists of service bureaus and of printing technologies.

VIS 205 Business Practices for Visual Artists 3 Credits

Examines legal and business issues affecting the professional visual artist.

Examines copyright and work for hire, marketing and self-promotion, estimating and pricing, insurance and liability and the computer's role in managing a business.

VIS 206 Interdisciplinary Studies 3 Credits

Offers students opportunities to complete selected projects while working in a team environment with students of other disciplines. Situations encountered closely simulate those found in industry.

VIS 207 Portfolio Preparation 3 Credits

Focuses on student's final preparation for the job interview. Finalizes project work demonstrating acquired knowledge and skills, along with resume and cover letter, for presentation to prospective employers. Provides students with the opportunity to use one credit for field study.

VIS 281-293 Special Topics in Visual Communications 1-5 Credits
Technology

Provides students with the opportunity to experience seminars, workshops and other instructional activities on topics of interest that reinforce the concepts presented in their program area. Contact chief academic officer for more information.

WLD 100 Welding Processes 3 Credits

Provides general study of oxy-fuel, shielded metal arc, gas tungsten arc, gas metal arc, submerged arc, plasma arc, resistance, flash and upset, friction, electron beam and laser welding processes. Covers equipment, techniques, electrodes, fuel gases and/or shielding gases, weld joint design, advantages and limitations, process applications, process variables and operational costs.

Course Descriptions

WLD 101 Gas Welding I 3 Credits

Introduces basic oxy-acetylene brazing. Involves detailed study of the techniques of making welds in flat positions. Includes gas brazing. Provides additional background essential to a qualified welder.

WLD 103 Arc Welding I 3 Credits

Covers the welding of ferrous metals and alloys utilizing metallic manual arc welding methods. Includes procedures in joint design using "T" joint, lap joint and butt joint designs. Covers single pass and multi-pass techniques. Emphasizes safety hazards and safe practices in arc welding.

WLD 105 Welding Equipment and Electrical Maintenance 3 Credits

Focuses on the design of oxy-fuel welding and cutting equipment and electric arc welding and cutting equipment. Enables students to perform troubleshooting on the equipment and apply proper maintenance. Examines relationships of voltage, current and resistance on electrical circuits with emphasis on the production of heat from the flow of electric current through resistance.

WLD 107 Welding Troubleshooting 3 Credits

Covers evaluation of weldments, welding procedures and tolerances, and joint design and alignment.

WLD 108 Shielded Metal Arc Welding I 3 Credits

Provides students with knowledge of shielded metal arc welding operations and equipment. Provides extensive practice time to produce the skills to make satisfactory welds with this process. Emphasizes safety hazards and safety practices in arc welding.

WLD 109 Oxy-Acetylene Gas Welding and Cutting 3 Credits

Offers basic instruction in oxy-acetylene welding with emphasis on welding techniques in flat, horizontal, vertical and overhead positions. Includes brazing and flame cutting. Focuses on safety hazards and safe practices in oxy-acetylene welding and cutting.

WLD 110 Welding Fabrication I 3 Credits

Provides opportunities for practice in hands-on fabrication of welded products. Includes basic equipment used in fabrication.

WLD 115 Shop Practices I 3 Credits

Provides use of shop to practice various types of welding to improve operator skill.

WLD 116	Shop Practices II	3 Credits
Continues open use of shop to practice various types of welding to improve operator skills.		
WLD 117	Shop Practices III	3 Credits
Continues open use of shop to practice various types of welding to improve operator skills.		
WLD 120	Metallurgy Fundamentals	3 Credits
Studies properties and uses of ferrous and nonferrous metals and alloys, production of iron and steel, composition and properties of plain carbon steel and alloying elements, selection of tools, case hardening and destructive and nondestructive testing. Includes fundamentals of heat treatment and reactions occurring in metals subjected to various heat treatment methods and techniques.		
WLD 201	Special Welding Processes	3 Credits
Welding practice with various welding processes and techniques using advanced welding methods, machines and equipment. Presents advanced arc welding with emphasis on use and orientation of submerged arc welding equipment.		
WLD 202	Arc Welding II	3 Credits
Offers instruction in electrode selections, weld techniques, power supplies and current characteristics in preparation for test.		
WLD 203	Pipe Welding I	3 Credits
Provides for extensive practice in the preparation and welding of pipe in the 2G & 5G position. Includes preparation, methods of welding, electrodes and filler wires.		
WLD 204	Pipe Welding II	3 Credits
Provides extensive training in the preparation and welding of pipe in the 5G and 6G position. Includes information on preparation, method of welding and electrodes and filler wires used.		
WLD 205	Welding Codes, Specifications and Estimating	3 Credits
Provides students with different types of welding codes and testing operations. Covers procedures, specifications and information about filler materials, positions, post-heat and pre-heat treatment, backing strips, preparations of parent metals, cleaning and defects. Includes AWS and ASME code.		

Course Descriptions

WLD 206 Shielded Metal Arc Welding II 3 Credits

Covers SMAW welding equipment and products used to produce groove type butt welds. Provides extensive practice to develop the skills to achieve satisfactory welds of this type. Safety hazards and safe practices in arc welding are emphasized.

WLD 207 Gas Metal Arc (MIG) Welding 3 Credits

Considers various gas metal arc welding (GMAW) processes including microwire, flux-core, innershield and submerged arc with emphasis on metal inert gas welding. Includes techniques of welding in all positions on various thicknesses of metal.

WLD 208 Gas Tungsten Arc (TIG) Welding 3 Credits

Provides students with thorough knowledge of the gas tungsten arc welding process. Includes detailed study of the techniques of making welds in all positions using the GTAW applications. Lectures and discussions provide additional background information essential to a qualified GTAW welder.

WLD 209 Welding Certification 3 Credits

Prepares the student for certification in shielded arc, TIG, and MIG welding through study of the qualifications, procedures and equipment standards. Includes a survey of qualifying agencies, associations and societies.

WLD 210 Welding Fabrication II 3 Credits

This course provides for practice in hands-on fabrication and the use of related equipment will be taught.

Accreditations and Memberships

Ivy Tech State College is accredited by the North Central Association of Colleges and Schools. Other accrediting agencies and affiliates are listed below by regions. The college is a member of the American Association of Collegiate Registrars and Admissions Officers, the American Association of Community Colleges, the Association of Community College Trustees, and the National Association of College and University Business Officers.

Region	Agency	Program Area
1	The American Culinary Federation Educational Institute	Culinary Arts
	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Joint Review Committee for Respiratory Therapy Education	Respiratory Care
	Accreditation Review Committee for the Surgical Technologist	Surgical Technology
	Indiana State Board of Nursing	Practical Nursing
	National League for Nursing	Practical Nursing
	Indiana State Board of Health	Nurse Aide
2	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	National Accrediting Agency for Clinical Laboratory Services	Medical Laboratory Technician Phlebotomy

Accreditations and Memberships

Region	Agency	Program Area
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide
	Indiana State Board of Nursing	Practical Nursing Associate in Science in Nursing
	Dietary Managers Association	Dietary Manager
	National League for Nursing	Associate in Science in Nursing
	Indiana State Emergency Management Agency	Emergency Medical Technician, Ambu- lance
3	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Joint Review Committee for Respiratory Therapy Education	Respiratory Care
	National Accrediting Agency for Clinical Laboratory Sciences	Medical Assistant
	Indiana State Board of Nursing	Practical Nursing
	Indiana State Board of Health	Nurse Aide Director of Activities/ Extended Care Social Services/Long Term Care
	Dietary Managers Association	Dietary Manager
	The American Culinary Federation Educational Institute	Culinary Arts

Accreditations and Memberships

Region	Agency	Program Area
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
4	Indiana State Board of Nursing	Associate in Science in Nursing Practical Nursing
	National League for Nursing	Associate in Science in Nursing
	Indiana State Board of Health	Qualified Medication Aide Nurse Aide
	American Dental Association, Commission on Dental Accreditation	Dental Assistant
	The American Medical Association Committee on Allied Health Education and Accreditation	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Accrediting Review Committee for the Surgical Technologist	Surgical Technology
	Joint Review Committee for Respiratory Therapy Education	Respiratory Care
	Dietary Managers' Association	Dietary Manager
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
	Association for Collegiate Business Schools and Programs	Accounting Technology Administrative Office Technology Business Administration

Accreditations and Memberships

Region	Agency	Program Area
4	Association for Collegiate Business School and Programs	Computer Information Systems
5	The American Medical Association Committee on Allied Health Education and Accreditation: American Association of Medical Assistants' Endowment	Medical Assistant
	Indiana State Board of Health	Qualified Medication Aide
	Indiana State Board of Nursing	Practical Nursing
	American Design Drafting Association	Design Technology
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
6	Indiana State Emergency Management Agency	Emergency Medical Technician, Ambulance/ Advance
	Indiana State Board of Nursing	Practical Nursing
	The American Medical Association Committee on Allied Health Education and Accreditation: American Association of Medical Assistants' Endowment	Medical Assistant
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide

Accreditations and Memberships

Region	Agency	Program Area
6	The American Medical Association Committee on Allied Health Education and Accreditation: American Association of Medical Assistants' Endowment	Medical Assistant
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
	National Association of Industrial Technology	Industrial Technology
7	Federal Aviation Administration	Aircraft Maintenance Technology
	Indiana State Board of Health	Nurse Aide Social Services/ Long Term Care Activity Director/ Long Term Care Qualified Medication Aide
	Indiana State Emergency Management Agency	Emergency Medical Technician
	Indiana State Board of Nursing	Practical Nursing
	National League for Nursing	Practical Nursing
	The American Medical Association Committee on Allied Health Education and Accreditation: American Association of Medical Assistants' Endowment	Medical Assistant

Accreditations and Memberships

Region	Agency	Program Area
7	National Accrediting Agency for Clinical Laboratory Sciences	Medical Laboratory Technician
	Joint Review Committee on Education in Radiologic Technology	Radiologic Technology
	National Association of Industrial Technology	Automotive Technology Manufacturing Technology Design Technology Electronics Technology Industrial Technology Quality Science
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
	Inner-Industry Council of Auto Repair	Automotive Technology
8	The American Culinary Federation Educational Institute	Culinary Arts
	Chef de Cuisine Association of Indiana, Inc.	Culinary Arts
	American Design Drafting Association	Design Technology
	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Accrediting Review Committee for the Surgical Technologist	Surgical Technology
	Joint Review Committee on Education in Radiologic Technology	Radiologic Technology

Accreditations and Memberships

Region	Agency	Program Area
8	Joint Review Committee for Respiratory Therapy Education	Respiratory Care
	Association of Collegiate Business Schools and Programs	Accounting Technology Administrative Office Technology Computer Information Systems Business Administration Hospitality Administration Paralegal
	Council for Standards in Human Services Education	Human Services
	National Association of Industrial Technology	Manufacturing Technology Automotive Technology Design Technology Electronics Technology
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
	National League for Nursing	Associate in Science in Nursing
	Indiana State Board of Nursing	Associate in Science in Nursing Practical Nursing
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide Social Service/ Long Term Care
9	Indiana State Board of Nursing	Associate in Science in Nursing Practical Nursing

Accreditations and Memberships

Region	Agency	Program Area
9	National League for Nursing	Associate in Science in Nursing
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
	Indiana State Board of Health	Nurse Aide
	Dietary Managers Association	Dietary Manager
	Indiana State Emergency Management Agency	Emergency Medical Technician, Ambulance
	Association of Collegiate Business Schools and Programs	Accounting Administrative Office Technology Business Administration Computer Information Systems Hospitality Administration
10	Indiana State Board of Nursing	Practical Nursing Associate in Science in Nursing
	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Indiana State Board of Health	Qualified Medication Aide Certified Nursing Assistant Home Health Aide

Accreditations and Memberships

Region	Agency	Program Area
10	National League for Nursing	Practical Nursing Associate in Science in Nursing
	Association of Surgical Technologists	Surgical Technology
11	Indiana State Board of Nursing	Practical Nursing Associate in Science in Nursing
	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Indiana State Emergency Management Agency	Emergency Medical Technician, Basic and Advanced
	CPNP Agency	Practical Nursing
	CADP Agency	Associate in Science in Nursing
12	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant
	Accrediting Review Committee for the Surgical Technologist	Surgical Technology
	Association of Collegiate Business Schools and Programs	Accounting Technology Administrative Office Technology Business Administration

Accreditations and Memberships

Region	Agency	Program Area
12	Association of Collegiate Business Schools and Programs	Computer Information Systems
	National Institute for Automotive Service Excellence/National Automotive Technicians' Education Foundation	Automotive Technology
13	Indiana State Board of Nursing	Practical Nursing
	Indiana State Board of Health	Nurse Aide Qualified Medication Aide
	Indiana State Emergency Management Agency	Emergency Medical Technician, Ambulance
	National Institute for Automotive Service Excellence	Automotive Technology
	The American Medical Association Committee on Allied Health Education and Accreditation:	
	American Association of Medical Assistants' Endowment	Medical Assistant

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